

53rd GEMBOREE

2017
LITHGOW

Incorporating the National Gem & Mineral
Show

Friday 14th – Monday 17th April, (Easter) 2017

Tony Luchetti Showground, Lithgow

Staged by the Gem & Lapidary Council of NSW Inc.

Under the auspices of A.F.L.A.C.A Inc.





You will be surprised by the amount of history Lithgow has to offer.



On the western fringe of the Blue Mountains, just two hours from Sydney and at the gateway to the Central West, the Lithgow area is the perfect getaway.

Top – Pearson's Lookout – overlooking Capertee Valley.

Middle – Blast Furnace Park.

Bottom – The Lithgow State Mine Heritage Park & Railway is an Australian mining museum.

Welcome to our GEMBOREE 2017



A strong, independent business woman with a rural background, Mayor Maree Statham is passionate about the future of the Lithgow LGA.

"The Lithgow region has been a hidden gem for many years. It's hard to believe that 1½ hours from Penrith, just a short train ride over the mountains and you are right in the centre of our CBD" says Maree. "Our Main Street is filled with boutique shops catering to the fashionista, gifts and home wares for the

home decorator and vibrant cafes and restaurants for the foodie".

Maree has been a hair dresser for 46 years and through her business 'Absolute Edge of Poise' teaches etiquette and grooming to young women. She loves her work with Fashions on the Field which takes her to many events throughout the Central West and is pleased to say "that the boutique shopping in Lithgow rivals that of any major shopping centre".

"We are proud of our history" she says, "From its very early beginnings as a rural settlement and the eventual catalyst for its rapid development, the discovery of coal, the Lithgow area has always been a fascinating area where rural meets industrial. Often referred to as the Pittsburg of the Southern Hemisphere in its industrial prime around the turn of the last century, Lithgow has contributed more than its fair share to industrial history, whether that be the clay chimney pots of suburban Sydney, to the steel for the Glebe Island bridge, weapons and blankets for the military to underwear, chilled meat, cement, power and beer to name but a few. The history of Lithgow is of an industrial powerhouse."

Today much of the industry has gone and what is left is a beautiful town in an unparalleled setting, oozing character and charm. I encourage visitors to take a short walk from the CBD and stroll along the History Avenue, visiting Eskbank House & Museum and

Blast Furnace Park, the site of Australia's first major ironworks" she says. "Bring a packed lunch or pick up something from one of our many cafes and you can picnic in the beautiful surrounds of Lake Pillans Wetlands, below the Blast Furnace".

Coming from a rural background, Maree grew up on the farm and today still runs the family property. Following the loss of her much loved husband in 2007 to medical negligence, she realised that life was too short. Her father had been the President of the Old Blaxland Shire which amalgamated with Greater Lithgow Council in 1974, and she knew it was time to give back to the area she loves. The day she was elected to Council and subsequently as Mayor, was the proudest in her life. "I only wish that my Dad was still alive today to give me some pointers" says Maree.

Being a Councillor has changed her life, "I often say that Council has become my new partner" says Maree. "I credit the success of my current term in office to the support of my fellow Councillors and the Council staff whom I have got to know over the last 3½ years".

In 2015, Lithgow City Council was selected as the winner of NSW's most prestigious award for Local Government, the A R Bluett Memorial Award. The A R Bluett Memorial Award is contested each year by councils in NSW recognising the most progressive in the state. The Award looks at all aspects of council operations and services. "I acknowledge the contribution that my fellow Councillors, both current and past, made to achieve this award, but mostly I give credit to the staff, who work tirelessly to ensure that the needs of the community they service are met day in day out" she says.

"It is an honour for me, as Mayor, to showcase the Lithgow Region and show you the improvements Lithgow City Council has made to not only benefit the local residents but for visitors to the Lithgow area.

Over the past few years some of the projects Council has endeavoured to improve include our new Lithgow Indoor Aquatic Centre, improvements to Blast Furnace Park, undergoing a Lithgow CDB revitalisation program and we have installed an accessible friendly boardwalk at Hassan's Walls and Pearson's Lookout. These are only a few things" say Maree.

"There are so many things to do here" Maree enthuses "What people may not realise is that surrounding the local government area are recreational activities galore." Whatever your bent, whether it be Four Wheel Driving, Walking, Mountain Biking or more less well known pursuits such as Rogaining, Rock Climbing or Canyoning, the area lends itself to being utilized for almost any recreational purpose.

Lithgow has always been famous for producing excellent sports men and women and for having world class sporting facilities. Lithgow regularly hosts State Championships in Hockey, Down Hill Mountain Biking and Go Karting and has produced household names such as Marjorie Jackson-Nelson, Denis Tipping, David Palmer, Marty Roebuck and Barry Rushworth.

Above all there is to be proud of in Lithgow the thing I am most proud of is the welcoming and including nature of the Lithgow locals" says Maree. "Wherever you may be in the local government area you are sure to get a friendly welcome, a broad smile and some good old fashioned country hospitality".

"The last few years, have seen many firsts for me; being elected to Council, being made Mayor in my first term, becoming a mother-in-law and I have recently become a grandmother for the first time with the birth of a beautiful baby girl, Porsha to my only daughter Emma. I hope to be a strong role model, not only for these two beautiful girls in my life but for others" says Maree, a women who is quietly confident that she is contributing to a bright future for everyone living and working in the Lithgow region.

On behalf of the Lithgow City Council and the residents of Lithgow, I would like to welcome everyone to the Lithgow Region.

Maree Statham

Mayor

Lithgow City Council



Note – photos courtesy Dieter Mylius (mineral front cover), Lithgow City Council, Australian Fossil & Mineral Museum and Alan McRae.

GEMBOREE 2017

TONY LUCHETTI SHOWGROUND, LITHGOW N.S.W.

Friday 14th to Monday 17th April, (Easter) 2017.

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**Buy a GEMBOREE 2017 Badge
to remember your trip to Lithgow
at Easter 2017 - only \$6 each.**

GEMBOREE 2017 FIELD TRIPS

Mick Lane, Blue Mountains Lapidary Club, Ernst Holland and Bathurst Stamp, Coin, Collectables and Lapidary Club members are arranging for several outings.

NOTE - To be eligible to participate in excursions you will need to show proof from your Club that you are current member and are covered by its personal accident insurance.

Details of trips will come out in the various GEMBOREE 2017 e-newsletters as well as the daily newsletters over Easter 2017.

Make sure you're getting the information and you are on the e-newsletter list by sending your email address to the e-newsletter editor at amcrae@lisp.com.au



BRIEF HISTORY OF LITHGOW

By Alan McRae, FAIHA, GEMBOREE 2017 Publicity Officer



With the crossing of the Blue Mountains by European settlers, Gregory Blaxland, William Lawson and William Charles Wentworth in 1813 Governor Macquarie (left) was keen to find out what lay beyond what was thought to be an impenetrable barrier. He called Surveyor William George Evans back from Tasmania to prove that the three explorers had indeed found a path and what was the land there like. Evans' party set out and discovered abundant pastures, good soil and rivers full of fish. Evans returned giving glowing reports to Macquarie. Keen to see the new land for himself the Governor had William Cox (below right) build a road to be terminated on what Evans called the Bathurst Plains.

The road, just over 100 miles long, was built by William Cox's party mainly of convicts in less than six months. The road commenced at Emu Ford in July 1814 ending up on the banks of the Macquarie River where Bathurst would be named in May 1815. William Cox's original road diverged away from where Lithgow would later be settled.



Andrew Brown is acknowledged as the first settler when he took up land between 1824 and 1826 at Bowenfels and applied for a grant. He was a Scotsman who sailed to the colony of New South Wales to oversee land at Wallerawang belonging to James Walker. Brown called his grant "Cooerwull" after the Wiradjuri name for the small blue flowers that grew locally.

Prior to the arrival of these Europeans the area around Lithgow had been occupied by the Darug, Wiradjuri and Gundungurra people who had the caretakers of the land for several thousand years. Each of the Aboriginal groups had traditional boundaries where they lived. Their territory provided them with food, medicines and materials to make weapons. These three tribes would have used skin cloaks to keep warm in winter.

In 1828, after Major Thomas Mitchell had been chosen as Surveyor-General, he soon realised that the Great Western Road needed attention. His solution was to survey a new route from Hartley via Mt Walker to Meadow Flat and on to Bathurst. This work took from 1832 and 1836. This meant that it was now near to Bowenfels and Lithgow and led to more inns being opened along the new road.

Lithgow would be situated at the 'intersection' of the Bells Line of Road (opened in 1823 but was really just a horse track from Richmond until the 1870s) and the Great Western Road, the latter named by Governor Macquarie.

Lithgow was named by Colonial Surveyor-General John Oxley in honour of William Lithgow a Scotsman who sailed to the Southern Colony in 1824 where he received the appointment of Assistant Commissary-General. An educated and competent man he was appointed to a number of responsible governmental jobs in the colony. Of note he was made a magistrate, was engaged as Auditor-General as well as Governor Darling's private secretary, who also appointed Lithgow to the Legislative Council.

The discovery of payable gold near Bathurst in 1851 had little effect on Lithgow though some of the travellers on their way to the Turon goldfields may have passed through the area. It was the 1860s before there was further activity. There were now just five families that were inhabiting the valley but changes in the transport system were on the way.

One of early settlers in the Lithgow Valley was Thomas Brown (no relation to Andrew Brown) who took up his 400 acre grant around 1835. He named his grant 'Eskbank' after the river Esk in his native Scotland. By 1842 he began building his sandstone house – Eskbank House. Ironically Thomas later entered minerals, gems and fossils in the Sydney Exhibitions, being exhibited in the Garden Palace in Hyde Park. The round house at Lithgow was built to house his mineral and fossil collection, so Lithgow has been exhibiting gems since its foundation.

By mid-1867 the railway workers had extended the line from Penrith to Wentworth Falls after which passengers journeying westward would join horsedrawn Cobb & Co coaches to further passengers journey six times per week. Coaches travelled via Hartley to Bowenfels where passengers could travel on to Mudgee till 1872 or Bathurst until February 1875. Cobb & Co had applied for many of the contracts to carry the mailbags throughout New South Wales.

To get the railway into Lithgow, John Whitton, the Chief Railway Engineer, had to design the route using a zig-zag pattern to overcome the steep gradients and sharp curves. Known as the Lithgow Zig Zag the idea kept the project more on budget though in 1910 ten tunnels bypassed this Zig Zag.

When the Great Western Railway finally reached Bowenfels in 1869 Lithgow was set to prosper and spawn a rich industrial history. Whilst settlers must have seen coal seams in the district it was Andrew Brown who was the first to mine coal to use in his water wheel driven flour mill (1837)

which he later converted to steam in 1851, then using coal to fire it in the early 1860s. Brown also use coal to operate his tweed woolen mill.

The railway brought railway contractors and labourers who needed to buy coal for cooking and warmth. By the mid 1870s there were four coal mines operating and whilst some mines have closed over the decades coal is still being mined in the Lithgow Valley today. Coal mined in the



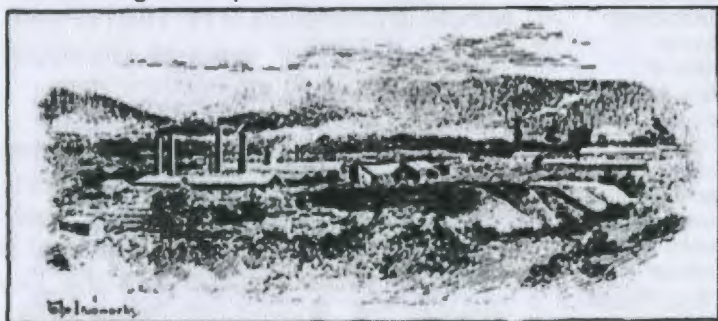
'Lithgow' seam yields high energy thermal coal, generates medium ash with a low to moderate phosphorous and sulphur content. Local mines were kept busy supplying coal to the steam engines

that were operating on the New South Wales Government Railways.

The next big manufacturing era was Lithgow's Iron and Steel works with iron smelting commencing in October 1875. Ore had been discovered on Eskbank land which was now owned by Enoch Hughes. The foundry was erected nearby after Enoch convinced James Rutherford of Cobb & Co fame (right) from Bathurst and ironically the NSW Minister for Public Works, the Honourable John Sutherland and Dan Williams, an engineer from Canada who worked on the Zig Zag, as shareholders. Within a year their blast furnace was producing over 100 tons of pig-iron per week. Unfortunately due to imports the venture initially failed.



The steel works were then taken over and reopened by William Sandford finally convincing the Government of New South Wales in 1907 to accept his steel contract. The purchasing of an improved blast furnace left him in financial strife and the works were taken over by two brothers, George and Cecil Hoskins, the next year. They relocated their works to Lithgow to meet the greater production.



Much of the 'ingredients' for the steel works was sourced locally, all adding to the employment of local labour. Iron ore, limestone and coal were needed to make coke, the plant having its own coke works. Even the refractory bricks were made locally. As the depression neared the smelters were closed down in 1927 and some five years later removed to Port Kembla.

Other major industry included a brick and pottery works in 1877 after suitable clay was found in the Lithgow Valley. The opening of the Small Arms Factory in 1908 after the Commonwealth Government announced plans to build a factory to manufacture various military and civilian small arms at Lithgow.

VENUES

1965	Coonabarabran
1966	Coonabarabran
1967	Nundle
1968	Gundagai
1969	Beechworth
1970	Nundle
1971	Coleraine
1972	Tanunda
1973	Inverell
1974	Nambour
1975	Broken Hill
1976	Gunnedah
1977	Shepparton
1978	Gympie
1979	Tanunda
1980	Wanneroo
1981	Devonport
1982	Glen Innes
1983	Broken Hill
1984	Mount Isa
1985	Wanneroo
1986	Loxton
1987	Shepparton
1988	Canberra
1989	Devonport
1990	Bundaberg
1991	Loxton
1992	Midland
1993	Alice Springs
1994	Ballarat
1995	Glen Innes
1996	Toowoomba
1997	Launceston
1998	Gawler
1999	Rockingham
2000	Ballarat
2001	Wagga Wagga
2002	Rockhampton
2003	Gawler
2004	Warragul
2005	Bathurst
2006	Hobart
2007	Townsville
2008	Murray Bridge
2009	Horsham
2010	Devonport
2011	Bathurst
2012	Bundaberg
2013	Murray River
2014	Gatton
2015	Horsham
2016	Ulverstone
2017	Lithgow

GEMBOREE HISTORY

Coonabarabran in New South Wales has the honour of conducting the first GEMBOREE in 1965 after suggestions were made to the editor of Australian Lapidary Magazine, Mr. Norm Patison. Norm had the vision and organised the Gemboree which has continued on every year since as the national gathering of lapidaries. There were only a few lapidary clubs and there was little thought about interaction and communication.

The GEMBOREE held the following year with even greater success was again organised by Norm. Norm then laid down a challenge "for any, one, two or three clubs to host next year's GEMBOREE". Three Sydney Clubs took the challenge with the 1967 GEMBOREE held at Nundle in northern N.S.W. Then in 1968 it was organised by four clubs at Gundagai, even further north. Its future appeared set.

The newly formed Combined Victorian Gem Clubs Association decided to start small holding a Gemkhana to bring their state members together in 1968. It was held in March to avoid clashing with the Gundagai GEMBOREE. Buoyed with the success of their Gymkhana the Victorian Association sought permission to conduct the 1969 GEMBOREE. One of their objects was to seek that the GEMBOREE should be held in a different state or territory of Australia each year.

With the support of the Australian Lapidary Magazine and previous organisers the first GEMBOREE held outside NSW was organised at Beechworth in northern Victoria. The result was the largest gathering of lapidaries and the general public witnessed so far.

Since 1969, the GEMBOREE has been staged in all states and territories. 1972 was the first year for South Australia, and Queensland's first was in 1974. 1980 was the debut for Western Australia, and Tasmania hosted their first event in 1981. In 1988, the GEMBOREE was staged in Canberra and in 1993 it was held in the Northern Territory at Alice Springs. Sadly, due to Western Australia's very small lapidary population combined with distance forced WA to withdraw as a GEMBOREE host - at least for the time being.

Norm Patison lived to see the GEMBOREE become a truly national event, and his name is commemorated on a perpetual trophy at the National Gem & Mineral competitions held in conjunction with each GEMBOREE.

GEMBOREE 2017

**Toni Luchetti Showground,
Lithgow NSW**

The 53rd National Gem & Mineral Show

**being held from Friday 14th to Monday 17th April, 2017,
at Toni Luchetti Showground, Lithgow NSW**

is staged by the

Gem & Lapidary Council of N.S.W. Inc

under the auspices of the

**Australian Federation of Lapidary &
Allied Crafts Association Inc.**

GEMBOREE 2017 COMPETITION SCHEDULE AND CONDITIONS

THIS IS A LEVEL 4 COMPETITION

GENERAL CONDITIONS

- 1 This competition will be judged in accordance with the rules and definitions of the Competitor and Judging Manual for Lapidary and Allied Competitions Issue No 8 April 2015, (referred to in this schedule as the Manual), unless otherwise stated in this Schedule.

Copies of the Manual can be obtained from the secretary of your State organization or can be purchased from the Competition Committee at a cost of \$6.00 plus \$3.50 postage – total \$9.50.

- 2 ENTRY FORMS, POSTAL ENTRIES and any enquiries relating to this competition should be sent to:

The Competition Committee
PO Box 60
OURIMBAH NSW 2258

Phone: Annette on 02 4341 5277 or
Barbara on 02 4393 6168 & Mobile 0417 676 435

- 3 ENTRY FORMS for all sections must be received by the Competition Committee **by Saturday 11th February 2017** together with a flat entry fee of \$5 per competitor. Entries from overseas competitors will be free. A stamped self-addressed envelope must be sent with the entry form.
- 4 ENTRIES in sections 1 to 4, 5C, 5D, 5E, 6 to 14, 18 to 25, 26A, 26B, 27A and 28B will be judged before the GEMBOREE.
They must be mailed to reach the Competition Committee **by Saturday 11th February 2017**. It is recommended that all mail entries be sent Registered or Express Post
Late entries will not be eligible for competition and will be returned.
- 5 ENTRIES in sections 5A, 5B, 16, 17, 26C, 29 to 38 and 40, will be judged at the GEMBOREE. Entries must be delivered to the Competition Committee and set up between 2 pm and 5 pm on Thursday 13th April 2017.
- 6 The preferred method for the return of entries is to be stated on the entry form and, if necessary, sufficient money to cover this return must be included with the entry fee. Registered post is recommended.
- 7 Cheques and postal orders are to be made payable to Gem and Lapidary Council NSW Inc.
- 8 Competitors are advised to check their eligibility to enter a Novice or Intermediate section.
If in doubt, their status can be verified by checking on the AFLACA Competition Winners List on the AFLACA website <http://aflaca.org.au/judging-rules/competitors/>
- 9 A maximum of two entries per person per section is allowed except for Showcase sections where only one entry per person is allowed.

The Competition Committee may transfer an entry into the correct Section if they are of the opinion that it has obviously been entered in the wrong section.

- 10 Overseas entrants are advised to include a copy of their entry form and clearly label their package 'Lapidary Competition Entries - to be returned'.
It is suggested that a high monetary value should **not** be stated in any paperwork to avoid possible problems with Customs.
- 11 While every care will be taken, the GEMBOREE Committee will not accept any responsibility for any loss or damage of competitive or non-competitive entries / exhibits that may occur in transit or whilst in the possession of the GEMBOREE Committee.
- 12 Competitors are responsible for insurance of their entries while in transit and while in the possession of the GEMBOREE Committee.
- 13 Judging sheets will be available for collection from the Competition Office between 3.00 pm and 5.00 pm on Friday 14th and Saturday 15th April 2017. Judging sheets not collected then will be returned with the actual entries.
- 14 Entries must be collected between 3.30 pm and 5.00 pm on Monday 17th April 2017. Entries not collected at this time will be returned to the competitor in the manner specified on the entry form.

SPECIAL CONDITIONS

- a. **SIZES and TOLERANCES:** Where an entry does not conform to the size conditions in this schedule or the Manual, it will be ruled ineligible. Where a minimum size hole is specified the measuring gauge must be at least 10mm thick.
- b. **Novelty Gemcraft, Section 17** – These sizes are not as specified in the manual, please refer to the schedule. Minimum size 50mm on the longest dimension excluding base and maximum size is 300mm including base.
- c. **Section O 40A-1 Miniature Showcase**

The Competition Committee will provide an A4 size area per competitor (in portrait mode). A space will be supplied within a showcase for the competitor to set up their display. The competitor will supply their own base but it must be A4 size. The base only is required, sides and top not allowed. The maximum height of display is 75mm including the base. A minimum of one item in each of at least 3 of the 14 categories is required. All other general showcase conditions still apply.

To be judged as Showcase General – Unlit. (Refer to Section 29A)

COMPETITION SCHEDULE

O = Open I = Intermediate
CS = Craftsmanship
AT = Annual Trophy

N = Novice J = Junior
AA = Aesthetic Appeal
SC = Special Conditions

PT = Perpetual Trophy

SCHEDULE

GROUPS 1 AND 2 CABOCHON CUTS

Minimum size - must not be able to be passed through a 15mm diameter hole. All cabochons MUST have a definite "Oval Shape". Unless otherwise specified in the schedule any Natural Lapidary Material can be used.

Sect. No.	Description		Trophy	SC
O	1A.1 Standard Cabochon	CS	PT-01, AT-21	a
I	1A.2 Standard Cabochon	CS		a
N	1A.3 Standard Cabochon	CS	PT-03	a
J	1A.4 Standard Cabochon	CS	AT-01, AT-15	a
O	1A.5 Standard Cabochon - Ribbonstone	AA	AT-07	a
I	1A.6 Standard Cabochon - Ribbonstone	AA		a
N	1A.7 Standard Cabochon - Ribbonstone	AA		a
O	1B.1 Fancy Cabochon - Agate	CS	PT-01	a
I	1B.2 Fancy Cabochon - Agate	CS	PT-02	a
N	1B.3 Fancy Cabochon - Agate	CS	PT-03	a
J	1B.4 Fancy Cabochon	CS	AT-01	a
O	1B.5 Fancy Cabochon - Obsidian	AA	AT-27	a
	(Rainbow, Snowflake or Mahogany ONLY)			
N	1B.6 Fancy Cabochon - Obsidian	AA		a
	(Rainbow, Snowflake or Mahogany ONLY)			
O	2A.1 Double Standard Cabochon	CS	AT-18	a
I	2A.2 Double Standard Cabochon	CS		a
N	2A.3 Double Standard Cabochon	CS	PT-03	a
O	2B.1 Double Fancy Cabochon	CS	PT-01	a
N	2B.2 Double Fancy Cabochon	CS		a

GROUP 3 FREE FORM SECTIONS

Sections 3.1 to 3.4 Minimum size - must not be able to be passed through 15mm diameter hole.

Sect. No.	Description		Trophy	SC
O	3.1 Free Form	CS	AT-27	a
I	3.2 Free Form	CS	PT-02	a
N	3.3 Free Form	CS		a
J	3.4 Free Form	CS	AT-01	a

Sections 3.5 to 3.7 Minimum size - must not be able to be passed through 10mm diameter hole.

Sect. No.	Description		Trophy	SC
O	3.5 Free Form - Opal Solid	CS	AT-14	a
N	3.6 Free Form - Opal Solid	CS		a
J	3.7 Free Form - Opal Solid	CS	AT-01	a

GROUP 4 OPAL SECTIONS

Minimum size - must not be able to be passed through a 10mm diameter hole.

Sect. No.	Description		Trophy	SC
O	4A.1 Opal Doublet – Flat top	CS	PT-01	a
N	4A.2 Opal Doublet – Flat top	CS		a
O	4C.1 Opal Triplet, Oval	CS		a

GROUP 5 CARVING / CAMEO / INTAGLIO SECTIONS

Sect. No.	Description		Trophy	SC
O	5A.1 Carving – Fully 3-Dimensional Hardness under 5		AT-27	
O	5A.2 Carving – Fully 3-Dimensional Hardness 5 and above		AT-25	
N	5A.3 Carving – Fully 3-Dimensional Hardness under 5			
J	5A.4 Carving – Fully 3-Dimensional Any Hardness (MUST be of a "Known Form")		AT-03	
O	5B.1 Carving - In Relief Any Hardness			
N	5B.2 Carving - In Relief Any Hardness			
O	5C.1 Cameo			
N	5C.2 Cameo			
O	5D.1 Intaglio			
N	5D.2 Intaglio			
O	5E.1 Carving not otherwise Specified in Group 5A to 5D			
N	5E.2 Carving not otherwise Specified in Group 5A to 5D			

GROUP 6 SCRIMSHAW

Sect. No.	Description
O	6.1 Scrimshaw
N	6.2 Scrimshaw

GROUP 7 SPHERE

Minimum size 30mm on the shortest dimension

Sect. No.	Description		SC
O	7A.1 Sphere	CS	
N	7A.2 Sphere	CS	

GROUPS 8, 9, 10 AND 11 FACET CUTS

Sect. No.	Description	Trophy
O	8A.1 Standard Brilliant – Continuous Girdle Natural Australian Coloured Quartz	PT-01, AT-23
I	8A.2 Standard Brilliant – Continuous Girdle Topaz	PT-02
N	8A.3 Standard Brilliant – Continuous Girdle Natural Coloured Quartz	
O	8B.1 Standard Brilliant – Faceted Girdle Man Made Coloured Corundum	AT-16
N	8B.2 Standard Brilliant – Faceted Girdle Man Made Coloured Corundum	AT-22
O	9A.1 Standard Oblong Step Cut with Cut Corners Australian Labradorite	AT-23
I	9B.1 Standard Square Step Cut with Cut Corners Man Made Spinel	
N	9B.2 Standard Square Step Cut with Cut Corners Man Made Spinel	PT-03
O	10.1 Improved Simple Trillion, Amethyst	AT-16, AT-27
I	10.2 Mount Ida Barion for Quartz, Citrine	
N	10.3 Sakura 96, Natural Coloured Quartz	AT-22
J	10.4 Trilled, Any Natural Quartz	
O	11.1 Hard Roku, Natural Blue Topaz	AT-10, AT-16, AT-27
I	11.2 Shouga, Coloured Cubic Zirconia	
N	11.3 Apex Octagon, Coloured Cubic Zirconia	AT-22

GROUP 12 TUMBLED STONES

Maximum size 40mm, minimum size - must not be able to be passed through a 15mm diameter circular hole.

Sect. No.	Description	Trophy	SC
O	12A.1 Tumbled Stones – Preformed Shape Group of 3 different materials	AT-27	a
N	12A.2 Tumbled Stones – Preformed Shape Group of 3 different materials		a

GROUPS 13 AND 14 POLISHED FACES

Sect. No.	Description	Trophy
O	13.1 Polished Face – Flat Surface	CS
N	13.2 Polished Face – Flat Surface	CS
O	14.1 Polished Face – Curved Surface	AA

GROUP 16 GEM TREES

Base **NOT** to exceed one third of overall height. (Paragraph D16.2 of the manual still applies)

Sect. No.	Description	SC
O	16.1 Gem Tree	a
N	16.2 Gem Tree	a
J	16.3 Gem Tree	a

GROUP 17 NOVELTY GEMCRAFT

Minimum size 50mm on the longest dimension excluding base and maximum size is 300mm including base.

Sect. No.	Description	Trophy	SC
O	17.1 Novelty Gemcraft	AT-27	b
N	17.2 Novelty Gemcraft		b
J	17.3 Novelty Gemcraft		b

GROUP 18 HAND FABRICATED AND WIRE WRAPPED JEWELLERY

Sect. No.	Description	Trophy
O	18A.1 Hand Fabricated Jewellery not intended to include Lapidary, Fossil or Mineral Item/s	AT-02
I	18A.2 Hand Fabricated Jewellery not intended to include Lapidary, Fossil or Mineral Item/s	
N	18A.3 Hand Fabricated Jewellery not intended to include Lapidary, Fossil or Mineral Item/s	
O	18B.1 Hand Fabricated Jewellery with Lapidary Item/s cut and set by entrant	AT-11, AT-27
I	18B.2 Hand Fabricated Jewellery with Lapidary Item/s cut and set by entrant	
N	18B.3 Hand Fabricated Jewellery with Lapidary Item/s cut and set by entrant	
O	18B.4 Hand Fabricated Jewellery with SOLID OPAL Item/s cut and set by entrant	AT-24
O	18C.1 Hand Fabricated Jewellery with Natural Fossil or Mineral Specimen/s set by entrant	AT-06
N	18C.2 Hand Fabricated Jewellery with Natural Fossil or Mineral Specimen/s set by entrant	
O	18D.1 Hand Fabricated Jewellery with Commercial Lapidary Item/s set by entrant	
N	18D.2 Hand Fabricated Jewellery with Commercial Lapidary Item/s set by entrant	
O	18E.1 Wire Wrapped Jewellery with Lapidary, Fossil or Mineral Item/s prepared and set by entrant	
N	18E.2 Wire Wrapped Jewellery with Lapidary, Fossil or Mineral Item/s prepared and set by entrant	AT-26
J	18E.3 Wire Wrapped Jewellery with Lapidary, Fossil or Mineral Item/s prepared and set by entrant	

19 CAST AND METAL CLAY JEWELLERY USING PATTERNS, MOULDS AND DIES MADE BY ENTRANT

Sect. No. Description

O	19A.1	Cast Jewellery not intended to include Lapidary, Fossil or Mineral Item/s	AT-28
N	19A.2	Cast Jewellery not intended to include Lapidary, Fossil or Mineral Item/s	AT-28
O	19B.1	Cast Jewellery with Lapidary Item/s cut and set by entrant	AT-28
O	19E.1	Metal Clay Jewellery not intended to include Lapidary, Fossil or Mineral Item/s	
O	19F.1	Metal Clay Jewellery with Lapidary Item/s cut and set by entrant	
O	19G.1	Metal Clay Jewellery with Commercial Lapidary Item/s set by entrant	

GROUP 20 CAST AND METAL CLAY JEWELLERY USING NATURAL OBJECTS AS PATTERNS

Sect. No. Description

O	20A.1	Cast Jewellery not intended to include Lapidary, Fossil or Mineral Item/s	AT-28
N	20A.2	Cast Jewellery not intended to include Lapidary, Fossil or Mineral Item/s	AT-28
O	20E.1	Metal Clay Jewellery not intended to include Lapidary, Fossil or Mineral Item/s	

GROUP 21 CAST JEWELLERY USING COMMERCIAL WAX MODELS OR PATTERNS

Sect. No. Description

O	21A.1	Cast Jewellery not intended to include Lapidary, Fossil or Mineral Item/s	AT-28
N	21A.2	Cast Jewellery not intended to include Lapidary, Fossil or Mineral Item/s	AT-28
O	21D.1	Cast Jewellery with Commercial Lapidary Item/s set by entrant	AT-28

GROUP 24 ENAMELLED JEWELLERY IN HAND FABRICATED OR CAST SETTING

Sect. No. Description

O	24A.1	Enamelled Jewellery in Hand Fabricated Setting	
N	24A.2	Enamelled Jewellery in Hand Fabricated Setting	
O	24C.1	Enamelled Jewellery in Cast Setting using Natural Objects as Patterns	
N	24C.2	Enamelled Jewellery in Cast Setting Using Natural Objects as Patterns	
O	24D.1	Enamelled Jewellery in Cast Setting using Commercial Wax Models or Patterns	

GROUP 25 COMMERCIAL MOUNT JEWELLERY

Sect. No.	Description	Trophy
O 25.1	Commercial Mount Jewellery with Lapidary Item/s cut and set by entrant	
I 25.2	Commercial Mount Jewellery with Lapidary Item/s cut and set by entrant	PT-02
N 25.3	Commercial Mount Jewellery with Lapidary Item/s cut and set by entrant	PT-03
J 25.4	Commercial Mount Jewellery with Lapidary Item/s cut and set by entrant	AT-01

GROUP 26 ENAMELLING SECTIONS

Sect. No.	Description	Trophy
O 26A.1	Enamelled Jewellery in Commercial Mount	
N 26A.2	Enamelled Jewellery in Commercial Mount	
O 26B.1	Enamelled Jewellery without Mount	
N 26B.2	Enamelled Jewellery without Mount	
O 26C.1	Enamelling Non Jewellery	AT-05
N 26C.2	Enamelling Non Jewellery	

GROUP 27 METALCRAFT

Sect. No.	Description
O 27A.1	General Metalcraft not intended to include Lapidary, Fossil or Mineral items

GROUP 28 METAL SHEET WORK

Sect. No.	Description
O 28B.1	Metal Sheet Work – Etched Pattern

GROUP 29 SHOWCASES

Sect. No.	Description	Trophy
O 29B.1	Showcase General – LIT	AT-17

GROUP 32 FOSSILS

Sect. No.	Description	SC
O 32A.1	Fossil Non Display – Any type Australian	
N 32A.2	Fossil Non Display – Any type Australian	
O 32A.3	Fossil Non Display – Any type Overseas	
N 32A.4	Fossil Non Display – Any type Overseas	
J 32A.5	Fossil Non Display – Any type Any Location	

Maximum plan size of whole group NOT to exceed 200 mm x 200 mm

O 32B.1	Fossil Non Display – Group of Three Mixed Australian	a
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N	32B.2	Fossil Non Display – Group of Three Mixed Overseas	a
J	32B.3	Fossil Non Display – Group of Three Any Location	a

GROUP 34 MINERALS NON DISPLAY

Maximum size allowable for Cabinet specimens 150 mm x 150 mm x 150 mm

Sect. No.	Description	Trophy	SC
O 34A.1	Mineral Non Display, Single Specimen Cabinet Size, Australian Specimen	AT-13	a
N 34A.2	Mineral Non Display, Single Specimen Cabinet Size, Australian Specimen	AT-12	a
J 34A.3	Mineral Non Display, Single Specimen Cabinet Size, Australian Specimen		a
O 34A.4	Mineral Non Display, Single Specimen Miniature Size, Overseas Specimen	AT-13	a
N 34A.5	Mineral Non Display, Single Specimen Miniature Size, Overseas Specimen	AT-12	a
O 34B.1	Mineral Non Display, Group of Three Miniature, Three different crystal systems	AT-13, AT-27	a
N 34B.2	Mineral Non Display, Group of Three Miniature, Three different crystal systems	AT-12	a
J 34B.3	Mineral Non Display, Group of Two Miniature, Two different crystal systems		a
O 34B.4	Mineral Non Display, Group of Three Crystal Clusters, Thumbnail, Australian Location/s	AT-09, AT-13	a
N 34B.5	Mineral Non Display, Group of Three Thumbnail, Any Location	AT-12	a
J 34B.6	Mineral Non Display, Group of Three Thumbnail, Any Location		a

GROUP 37 MINERAL SHOWCASE

Sect. No.	Description	Trophy
O 38B.1	Mineral Showcase – Display – SOLO - LIT Copper Minerals	AT-20

GROUP 40 MINIATURE SHOWCASE

Sect. No.	Description	SC
O 40A.1	Showcase General – UNLIT – Miniature Display	c

PERPETUAL TROPHIES

PT-04 Ray Powell

CHAMPION CLUB

Donor Gem & Lapidary Council of NSW Inc.
Club with highest aggregate score of members entries based on the following:
20 points for each 1st placed entry (including 'Special Awards' given in place of 1st)
15 points for each 2nd highest scoring entry
10 points for each 3rd highest scoring entry
5 points for each 4th highest scoring entry

ANNUAL TROPHIES

PT-01 Tom Jenkins

OPEN CHAMPION LAPIDARY

Donor Victorian Gem Clubs Association Inc.
Highest aggregate score of Entrant's best entry in each of the following FIVE (5) Open sections:

- O 1A.1 Standard Cabochon
 - O 1B.1 Fancy Cabochon
 - O 2B.1 Double Fancy Cabochon
 - O 4A.1 Opal Doublet - Flat Top
 - O 8A.1 Standard Brilliant - Continuous
- Girdle, Natural Australian Coloured Quartz

PT-02 Harold Evans

INTERMEDIATE CHAMPION LAPIDARY

Donor Victorian Gem Clubs Association Inc.
Highest aggregate score of entrant's best entry in any 3 of the following 4 Intermediate sections:

- I 1B.2 Fancy Cabochon
 - I 3.2 Freeform
 - I 8A.2 Standard Brilliant - Continuous
- Girdle, Topaz
- I 25.2 Commercial Mount Jewellery

PT-03 Norm Patison

NOVICE CHAMPION LAPIDARY

Donor P. Murphy and T. Annear via AFLACA trophy fund.

Highest aggregate score of entrant's best entry in any 4 of the following 5 Novice sections:

- N 1A.3 Standard Cabochon
 - N 1B.3 Fancy Cabochon
 - N 2A.3 Double Standard Cabochon
 - N 9B.2 Standard Square Step Cut with
- Cut Corners, Man made Coloured Spinel
- N 25.3 Commercial Mount Jewellery

AT-01 Dorothy Caladine

JUNIOR CHAMPION LAPIDARY

Donor Mrs. R. Sabella

Highest aggregate score of entrant's best entry in any 3 of the following 5 Junior sections.

- J 1A.4 Standard Cabochon
- J 1B.4 Fancy Cabochon
- J 3.4 Free Form - Any Material
- J 3.7 Free Form - Opal Solid
- J 25.4 Commercial Mount Jewellery

AT-02 Far Out Crystals Gems & Minerals

Donor Far Out Crystals Gems & Minerals
Winner of Section O 18A.1 Hand Fabricated Jewellery not intended to Include Lapidary, Fossil or Mineral Items

AT-03 Dorothy Caladine

Donor Mrs. R. Sabella

Entrant with highest individual score in Junior Carving section J 5A.4

AT-04 The Crystal Habit Trophy

Donor Peter Beckwith

Best Mineral of Show

Donor selects winner from ALL minerals on display whether competitive or non-competitive.

Dealers, companies or institutions are not eligible.

AT-05 Val Annear

Donor Victorian Gems Clubs Association Inc.
Winner of Section O 26C.1 Enamelling Non Jewellery

AT-06 John S Ryding

Donor Mrs J. Ryding via AFLACA Trophy Fund

Winner of Section O 18C.1 Hand Fabricated Jewellery with Natural Mineral or Fossil specimen(s) set by entrant.

AT-07 Harry Miller

Donor Mrs. D Miller via AFLACA Trophy Fund

Winner of Section O 1A.5 - Standard Cabochon Aesthetic Appeal

AT-08 Earth Stones

Donor Earth Stones - Mr. J. Mommers

Best Fossil of Show

Donor selects winner from ALL fossils on display whether competitive or non-competitive.

Dealers, companies or institutions are not eligible.

AT-09 George Lude

Donor Queensland Lapidary and Allied Crafts Clubs Association Inc.

Winner Section O 34B.4 Minerals Non Display Group of Three Crystal Clusters, Thumbnail, Australian Location.

AT-10 Alex Amess

Donor Victoria Gem Clubs Association Inc.

Winner of Facet Section O 11.1 Fancy Cut Hard Roku, Natural Blue Topaz

AT-11 A & E Metal Merchants

Donor A & E metal Merchants

Winner of Section O 18B.1 Hand fabricated Jewellery with Lapidary item/s cut and set by entrant

AT-12 Jim Johnson

Donor GMCASA via AFLACA Trophy fund

Champion Novice Mineral Competitor

Highest aggregate score of Entrant's best entry in any 3 Novice Mineral sections - Including Showcase.

AT-13 Broken Hill Centenary

Donor AFLACA

Champion Open Mineral Competitor

Highest aggregate score of Entrant's best entry in a minimum of 3 Open Mineral sections

AT-14 Ted Koller

Donor Victoria Gem Clubs Association Inc.

Winner of Section O 3.5 Free Form OPAL SOLID Craftsmanship

AT-15 Dazlyn Gems

Donor Dazlyn Gems

Winner of Section J 1A.4 Standard Cabochon Craftsmanship

AT-16 Peter Collins

Donor Australian Facetors' Guild Ltd

Champion Open Facetor

Highest aggregate score of entrant's best entry in the following 3 Open Faceting Sections,

O 8B.1, O 10.1 & O 11.1. If tied, Entrant with highest point scoring entry will be the winner.

AT-17 Arthur Roffey

Donor Arthur Roffey

Winner of Section O 29B.1 Showcase General Display -Lit

AT-18 Boris Novic

Donor Gem & Lapidary Council of NSW Inc.

Winner of Section O 2A.1 Double Standard Cabochon Craftsmanship

AT-19 Patrick C Murphy

Donor Arthur Roffey

Champion Junior Mineral Competitor

Highest aggregate score of a Junior's best entry in a minimum of 3 Mineral sections

Irrespective of Division

Applies to all Mineral Sections O 34A.1 to J 34B.6.

AT-20 Cyril Kovac
Donor Cyril Kovac
Winner of Section O 38B.1 Mineral Showcase - Display SOLO - Lit - Copper

AT-21 Brian Bown
Donor Brian Bown
Winner of Section O 1A.1 Standard Cabochon Craftsmanship

AT-22 Jack Bushby
Donor Southern Rockhounds
Champion Novice Faceter
Highest aggregate score of entrant's best entry in the following 3 Novice Faceting Sections,
N 8B.2, N 10.3 and N 11.3. If tied, Entrant with highest point scoring entry will be the winner.

AT-23 Dick Moppett
Donor Gem & Lapidary Council of NSW Inc
Highest aggregate score of entrant's best entry in sections O 8A.1 Open Standard Brilliant Continuous Girdle in Natural Australian Coloured Quartz and O 9A.1 Standard Oblong Step Cut with Cut corners in Australian Labradorite.

AT-24 Chas Totterdell
Donor Gem & Lapidary Council of NSW Inc
Winner of Section O 18B.4 Hand Fabricated Jewellery with SOLID OPAL Item/s cut and set by entrant

AT-25 The Lapidary & Gem Club of Victoria
Donor Victoria Gem Clubs Association Inc.
Winner of Section O 5A.2 Carving Fully 3-Dimensional, Hardness 5 and above

AT-26 Gold Coast School of Wirecraft
Donor Paul Howard
Highest scoring entry in Section N 18E.2

AT-27 The Tony Annear OAM Memorial Trophy
Donor AFLACA
Highest aggregate score of entrant's best entry in the following 10 sections:
O 1B.5 Fancy Cabochon, Obsidian, Aesthetic Appeal; O 3.1 Freeform; O 5A.1 Carving, Fully 3-Dimensional Hardness under 5 O 10.1 Improved Simple Trillion, Amethyst O 11.1 Hard Roku, Natural Blue Topaz; O 12A.1 Tumbled Stones; Preformed Shape Group of 3 different materials; O 13.1 Polished Face, Flat Surface; O 17.1 Novelty Gemcraft;
O 18B.1 Hand Fabricated Jewellery with Lapidary Item/s cut and set by entrant;
O 34B.1 Mineral Non Display, Group of Three, Miniature, Three different crystal systems.

AT-28 Cast Jewellery Trophy
Donor Queensland Gem Clubs Association Inc.
The highest individual scoring entry in any of cast Jewellery sections. 19 A & B, 20 A, 21 A & D

SPECIAL TROPHIES

ST-01 GEMBOREE Senior Princess
Donor Victoria Gem Clubs Association Inc.
For selected Entrant chosen and crowned by GEMBOREE organisers

ST-02 GEMBOREE Junior Princess
Donor Tasmania Lapidary and Mineral Association Inc.
For selected Entrant chosen and crowned by GEMBOREE organisers

ST-03 Best Presented Trade Stand
Donor Shepparton & District Gem Club
Awarded to Commercial Dealer whose stand is judged 'Best Presented' by someone appointed by Donor or GEMBOREE Committee.

TAILGATING APPLICATION FORM - (COMMERCIAL)

GEMBOREE 2017

I wish to apply for **Commercial** Tailgating at the GEMBOREE 2017 in Lithgow. I have read the "Terms & Conditions" and by signing this form, both my assistants and I agree to abide by them. (Please print clearly).

Surname Given name

Address

Phone Mobile Email

Please circle the days you wish to tailgate:

Friday 14th April Saturday 15th April Sunday 16th April Monday 17th April

FEES: Fees are \$50 per day (or part thereof) for 4 metres (12').

Note: A copy of your Public Liability insurance cover MUST be attached to this Application Form.

PAYMENT: Tailgating Fee Day/s @ \$50 per day \$.....

Extra Site/s ... x ... Day/s @ \$50 per day \$.....

Registration Fee ... x ... Day/s @ \$8 per day \$.....

(per adult if you have not registered a Campsite or as staying Off Site.)

TOTAL Enclosed (Cheque/Money Order) \$.....

DECLARATION: I have attached a copy of my Public Liability Insurance policy with a minimum cover over \$20M that will be valid at the time of this event. I have also read and will abide by the **Terms & Conditions** below.

Signed **Date**

Please Note: If you do not have a business name and/or do not buy stock for the purpose of re-selling, you may be eligible to use the "Private/Non-Commercial Tailgating Application Form. Please check all Terms and Conditions first to ensure you are eligible.

Terms & Conditions:

1. I will abide by the following terms and conditions to tailgate at GEMBOREE 2017.
2. I will sell only items or material which is of a lapidary nature or lapidary related.
3. I will trade only within the times and areas allotted to me by the organisers. Tailgating sites will be cleared each day and there will be no camping on these sites.
4. I will trade in a respectful manner at all times and follow instructions from the organisers.
5. I understand that my application to tailgate does not entitle me to trade, except upon acceptance by the organisers and receipt of the permit to trade.
6. I agree to pay the appropriate registration fee as a participant of GEMBOREE 2017 and to pay the required tailgating fees.
7. A copy of my Public Liability Insurance cover with a minimum cover of \$20M that will be valid at the time of this event is attached to the application form. Insurance must be in tailgater's name.
8. I understand that my application form lodged without a copy of my insurance will not be accepted and will be returned.
9. I understand that the organisers are not able to provide Public Liability Insurance for commercial tailgaters.
10. Should I contravene any part of this contract, I agree to vacate the GEMBOREE 2017 site and forfeit all monies paid.
11. All applications to be in at least 3 weeks before the event.

PLEASE MAKE ALL CHEQUES PAYABLE TO: The Gem & Lapidary Council of NSW.

MAIL TO: Ernst Holland PO Box 1351 Bathurst 2795.NSW.

(Please Note: A stamped addressed envelope must be included.)

ENQUIRIES TO: Ernst Holland H O2 63373661. M 0427373661 or e-mail ernst.holland@bigpond.com

TAILGATING APPLICATION FORM -- (PRIVATE / NON --COMMERCIAL)

GEMBOREE 2017

I wish to apply for **Private/Non-commercial Tailgating** at the GEMBOREE 2017 in Lithgow. I have read the **"Terms & Conditions"** and by signing this form, both my assistants and I agree to abide by them. (Please print clearly).

Surname Given name

Address

Phone Mobile Email

Applicant's Club

Please circle the days you wish to tailgate:

Friday 14th April Saturday 15th April Sunday 16th April Monday 17th April

FEES: Fees are \$30 per day (or part thereof) for 4 metres (12').

Note: You **MUST** have your own Public Liability Insurance.

PAYMENT:	Tailgating Fee Day/s @ \$30 per day	\$.....
	Extra Site/s ... x ... Day/s @ \$30 per day	\$.....
	Registration Fee ... x ... Day/s @ \$8 Per day	\$.....
	(per adult if you have not registered a Campsite or as staying Off Site.)	
	TOTAL Enclosed (Cheque/Money Order)	\$.....

DECLARATION: I am a casual amateur tailgater who does not have a business name and/or does not buy stock for the purpose of re-selling. I have read and will abide by the Terms & Conditions below.

Signed **Date**

Please Note: If you have a business name and/or buy stock for the purpose of re-selling, or have your own insurance, you **MUST** use the "Commercial" Tailgating Application Form!

Terms & Conditions:

1. I will abide by the following terms and conditions to tailgate at GEMBOREE 2017.
2. I am a hobbyist and do not earn any monies from any commercial/semi-commercial phase of the hobby. e.g. mining, dealing, full time cutting or manufacturing.
3. I will not make credit facilities available.
4. I will sell only material surplus to my hobby activities e.g. field collecting, up-grading my collection and/or items made by me which will be of a lapidary nature or lapidary related.
5. The material for sale has not been purchased with the object of resale, except for commercially manufactured findings used in jewellery making.
6. I will trade only within the times and areas allotted to me by the organisers. Tailgating sites will be cleared each day and there will be no camping on these sites.
7. I will trade in a respectful manner at all times and follow instructions from the organisers.
8. Application to tailgate does not entitle me to trade, except upon acceptance by the organisers and receipt of the permit to trade.
9. I agree to pay the appropriate registration fee as a participant of GEMBOREE 2017 and to pay the required tailgating fees.
10. Should I contravene any part of this contract, I agree to vacate the GEMBOREE 2017 site and forfeit all monies paid.
11. All applications to be in at least 3 weeks before the event.

PLEASE MAKE ALL CHEQUES PAYABLE TO: The Gem & Lapidary Council of NSW.

MAIL TO: Ernst Holland PO Box 1351 Bathurst 2795.NSW.

(Please Note: A stamped addressed envelope must be included.)

ENQUIRIES TO: Ernst Holland H 02 63373661. M 0427373661 or e-mail ernst.holland@bigpond.com

GEMBOREE 2017 **REGISTRATION FORM**

Mail to: GEMBOREE 2017 Registrar
PO Box 60, Ourimbah NSW 2258

Please ensure this form arrives prior to 11th February 2017, all cheques are to be made to the Gem & Lapidary Council of NSW Inc. and enclose a stamped self-addressed envelope. Registration covers from Noon Wednesday 12th April to Noon Tuesday 18th April 2017. Limited on-site power is available. **GENERATORS WILL BE ALLOWED BETWEEN 7.30am and 10.00pm. *Pets are permitted on site under strict control but NOT allowed in the Exhibition Hall.***

Surname: **Given Names:**

Address:

State: **Postcode:** **Phone:**

Your Club: *Do you want to be near members of your Club? YES/NO*

CAMPSITE ACCOMMODATION: Please indicate if you have an annex

Caravan m Xm Annex m Xm (YES/NO)

Camper m Xm Annex m Xm (YES/NO)

Tent m Xm **Close to Toilets?** Yes/No **Disabled?** Yes/No

Caravanners, please fill your water tanks prior to arrival and be aware some sites may require long leads.

ON-SITE FEES: For 2 Adults & up to 4 Children (school age).

Powered Site \$120.00 \$

Unpowered Site \$80.00 \$

Extra Adult/s @ \$25.00 No. \$

Extra Vehicle \$5.00 \$

OFF-SITE FEES: Per person for the duration of the GEMBOREE 2017

Adults* @ \$24.00 No. \$

Children 5 to 16yrs @ \$5.00No. \$

SOUVENIR GEMBOREE BADGES @ \$6.00 No. \$

Total Enclosed \$

**Admission at the door is \$8 per day per adult so the prepaid admission is cheaper.*

GEMBOREE 2017 – LITHGOW NSW

NON-COMPETITION DISPLAY ENTRY FORM

Mail to: The Competition Committee,
PO Box 60,
Ourimbah NSW 2258

Phone: (02) 4341 5277 or (02) 4393 6168

NOTE - This form is to be in the hands of the Competition Committee no later than the 11th February 2017.

Name:.....

Address:.....

State:..... Postcode:..... Phone:.....

Mobile:..... e-mail:.....

Description of Exhibit

.....
.....
.....

Size: Width.....mm Depth.....mm Height.....mm

Note:

1. Is your Showcase FREE STANDING or TABLE TOP? (Circle applicable)
2. No Entry Fee is Payable
3. Your exhibit must be set up in the GEMBOREE Exhibition Area between 3.00pm and 5.00pm on Thursday 13th April 2017 OR at an earlier time as may be agreed with the Committee. Please indicate if you wish to set up earlier, and we will do our best to assist you.
4. Your Exhibit can be collected from the Exhibition area between 3.00pm and 4.00pm on Monday 17th April 2017.
5. Individuals, Clubs, Traders, Museums and Mining Companies are invited to participate.

GEMBOREE 2017 – LITHGOW NSW

VOLUNTARY ASSISTANCE FORM

Mail to : Volunteer Co-ordinator
PO Box 60
Ourimbah NSW 2258

Any queries please ring GEMBOREE Co-ordinator Colin Wright 02 9521 2688

Please ensure this form arrives prior to 11th February, 2017

Please offer some of your time to make the 2017 GEMBOREE more enjoyable for everyone. Your help will be greatly appreciated.

Please indicate below which areas, days and times that you are able to assist. The major areas in which we need help are:

- CAMPSITE MARKING etc. from Tuesday April 11th.
- CAMPSITE GATES from noon Wednesday including overnight Wednesday and Thursday.
- EXHIBITION SETTING UP from Wednesday AM.
- EXHIBITION DOORS from noon Friday to Monday closing.
- EXHIBITION HALL STEWARD during the Shows opening hours.
- EXHIBITION DISMANTLING on Monday afternoon.
- CAMPSITE CLEANUP, TRESTLE LOADING etc.
- OTHER ASSISTANCE – Please specify.

NAME :

ADDRESS :

STATE : POSTCODE :

PHONE : Email :

Area(s) where you are offering to help:

.....
.....
.....

Times you are available between: Tuesday April 11th and Tuesday April 18th:

.....
.....
.....
.....

**GEMBOREE 2017
COMPETITION ENTRY FORM**

Mail to: **The Competition Committee,**
 PO Box 60, Ourimbah NSW 2258
 Phone: (02) 4341 5277 or (02) 4393 6168

Entry Form to arrive by **Saturday 11th February 2017** together with entry fees and stamped self-addressed envelope for return of official receipt.

Name:.....

Address:.....

State:..... Postcode:..... Phone:..... Mobile:.....

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e-mail:..... Full name of Club:.....

Date of birth (Juniors only):..... Under 16 at 11th February 2017

No. of Entries:	Flat fee of \$5.00:	\$5.00
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Will collect Entries:	or	Return (Registered) Postage:	\$.....
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Signed:.....	Total Enclosed:	\$.....
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Please note all cheques to be made payable to: **Gem and Lapidary Council of NSW inc.**

Please note: It is recommended that all mail entries be sent Registered or Express Post.
Entries in these sections must be the hands of the Competition Committee by **Saturday 11th February 2017**. Please show number of entries (1 or 2) below in nominated section.

O 1A.1	I 1A.2	N 1A.3	J 1A.4	O 1A.5	I 1A.6	N 1A.7	O 1B.1	I 1B.2	N 1B.3	J 1B.4
O 1B.5	N 1B.6	O 2A.1	I 2A.2	N 2A.3	O 2B.1	N 2B.2	O 3.1	I 3.2	N 3.3	J 3.4
O 3.5	N 3.6	J 3.7	O 4A.1	N 4A.2	O 4C.1	O 5C.1	N 5C.2	O 5D.1	N 5D.2	O 5E.1
N 5E.2	O 6.1	N 6.2	O 7A.1	N 7A.2	O 8A.1	I 8A.2	N 8A.3	O 8B.1	N 8B.2	O 9A.1
I 9B.1	N 9B.2	O 10.1	I 10.2	N 10.3	J 10.4	O 11.1	I 11.2	N 11.3	O 12A.1	N 12A.2
O 13.1	N 13.2	O 14.1	O 18A.1	I 18A.2	N 18A.3	O 18B.1	I 18B.2	N 18B.3	O 18B.4	O 18C.1
N 18C.2	O 18D.1	N 18D.2	O 18E.1	N 18E.2	J 18E.3	O 19A.1	N 19A.2	O 19B.1	O 19E.1	O 19F.1
O 19G.1	O 20A.1	N 20A.2	O 20E.1	O 21A.1	N 21A.2	O 21D.1	O 24A.1	N 24A.2	O 24C.1	N 24C.2
O 24D.1	O 25.1	I 25.2	N 25.3	J 25.4	O 26A.1	N 26A.2	O 26B.1	N 26B.2	O 27A.1	O 28B.1

Entries in the sections below to be set ready for judging by 5pm Thursday 13th April 2017.

Show number of entries (1 or 2) below in nominated section.

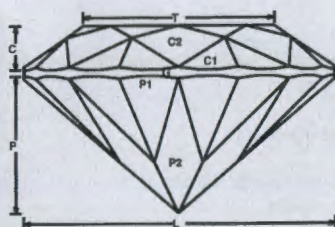
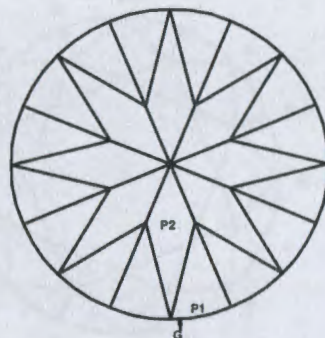
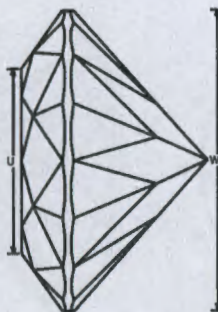
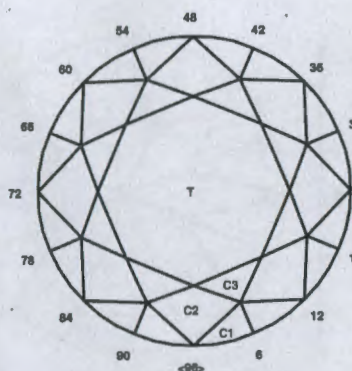
O 5A.1	O 5A.2	N 5A.3	J 5A.4	O 5B.1	N 5B.2	O 16.1	N 16.2	J 16.3	O 17.1	N 17.2
J 17.3	O 26C.1	N 26C.2	O 29B.1	O 32A.1	N 32A.2	O 32A.3	N 32A.4	J 32A.5	O 32B.1	N 32B.2
J 32B.3	O 34A.1	N 34A.2	J 34A.3	O 34A.4	N 34A.5	O 34B.1	N 34B.2	J 34B.3	O 34B.4	N 34B.5
J 34B.6	O 38B.1	O 40A.1								

Competition Showcase Dimensions

O 29B.1		Width	Depth.....	Height.....	O 38B.1		Width.....	Depth.....	Height.....
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SECTION: O.8A.1; N.8A.3 – STANDARD BRILLIANT with CONTINUOUS GIRDL
MATERIAL – NATURAL AUSTRALIAN COLOURED QUARTZ

FACETS - 58: MEETS - 41 (Crown - 24, Pavilion - 17)



Standard Round Brilliant with Continuous Girdle

Angles for R.I. = 1.540

57 + 1 rolled girdle

8-fold, mirror-image symmetry

96 index

$L/W = 1.000$ $T/W = 0.516$ $U/W = 0.516$

$P/W = 0.476$ $C/W = 0.228$

$Vol. /W^3 = 0.280$

PAVILION

P1 43.00° 03-09-15-21-27-33-39-45-
51-57-63-69-75-81-87-93

Create TCP

G 90.00°

Cut to size, "rolled girdle"

P2 41.00° 96-12-24-36-48-60-72-84

Meet, P1, G, form PCP

CROWN

C1 42.00° 03-09-15-21-27-33-39-45-
51-57-63-69-75-81-87-93

Set girdle thickness

C2 34.72° 96-12-24-36-48-60-72-84

Meet, C1, G

C3 19.61° 06-18-30-42-54-66-78-90

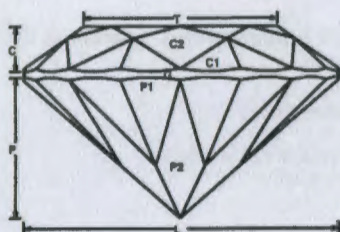
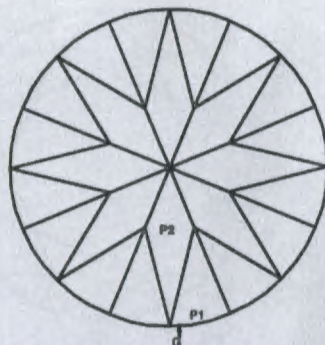
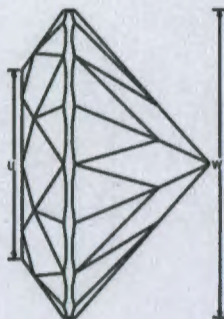
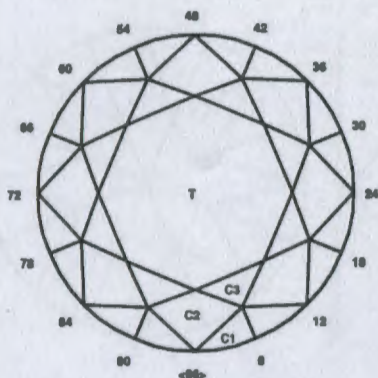
Meet, C1, C2

T 0.00° Table

Meet, C3, C2, C3

SECTION: 1.8A.2 – STANDARD BRILLIANT with CONTINUOUS GIRDL
MATERIAL – TOPAZ

FACETS - 58: MEETS - 41 (Crown - 24, Pavilion - 17)



Standard Round Brilliant with Continuous Girdle

Angles for R.I. = 1.810

57 + 1 rolled girdle

8-fold, mirror-image symmetry

98 index

$L/W = 1.000$ $T/W = 0.516$ $U/W = 0.516$

$P/W = 0.476$ $C/W = 0.228$

Vol. $M^3 = 0.260$

PAVILION

P1 43.00° 03-09-15-21-27-33-39-45-
51-57-63-69-75-81-87-93

Create TCP

G 90.00°

Cut to size, "rolled girdle"

P2 41.00° 96-12-24-36-48-60-72-84

Meet, P1, G, form PCP

CROWN

C1 44.81° 03-09-15-21-27-33-39-45-
51-57-63-69-75-81-87-93

Set girdle thickness

C2 39.00° 96-12-24-36-48-60-72-84

Meet, C1, G

C3 23.49° 06-18-30-42-54-66-78-90

Meet, C1, C2

T 0.00° Table

Meet, C3, C2, C3

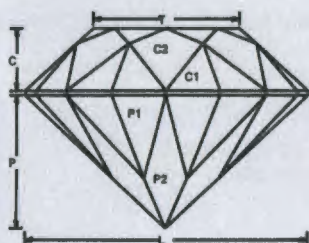
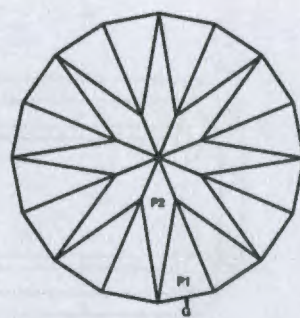
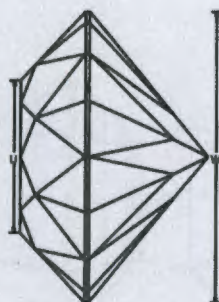
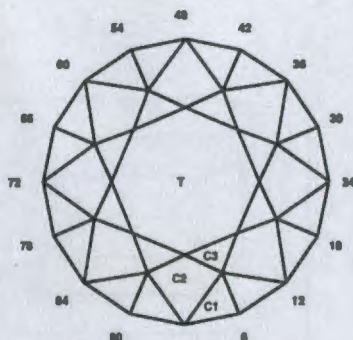
T 0.00° Table

Meet, C3, C2, C3

SECTION: O.8B.1; N.8B.2 – STANDARD BRILLIANT WITH FACETED GIRDLE

MATERIAL – MM COLOURED CORUNDUM

FACETS - 73: MEETS - 57 (Crown - 32, Pavillion - 25)



STANDARD BRILLIANT WITH FACETED GIRDLE

Angles for R.I. = 1.760

57 + 16 girdles = 73 facets

8-fold, mirror-image symmetry

96 index

L/W = 1.000 T/W = 0.516

P/W = 0.466 C/W = 0.218

Vol. /W³ = 0.240

PAVILION

P1 43.00° 03-09-15-21-27-33-39-45-51-57-63-69-75-81-87-93

Cut to TCP

G 90.00° 03-09-15-21-27-33-39-45-51-57-63-69-75-81-87-93

Outline girdle

P2 41.00° 96-12-24-36-48-60-72-84

Cut to meet P1 - G

CROWN

C1 48.00° 03-09-15-21-27-33-39-45-51-57-63-69-75-81-87-93

Set girdle width

C2 43.00° 96-12-24-36-48-60-72-84

Cut to meet C1 - G

C3 27.00° 06-18-30-42-54-66-78-90

Cut to meet C1 - C2

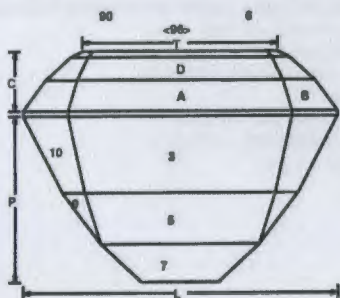
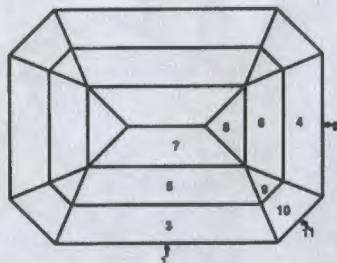
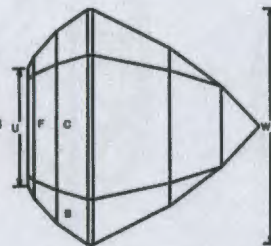
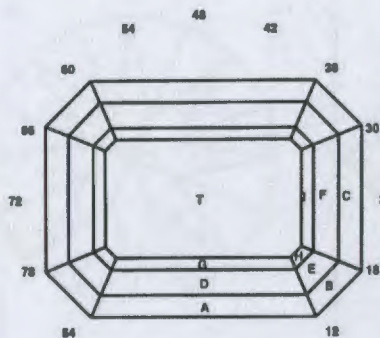
T 0.00° Table

Cut to meet C3 - C2 - C3

SECTION: 0.9A.1 - STANDARD OBLONG STEP CUT WITH CUT CORNERS

MATERIAL – AUSTRALIAN LABRADORITE

FACETS - 53: MEETS - 44 (Crown - 24, Pavilion - 20)



Standard Oblong Step Cut with Cut Corners

Angles for R.I. = 1.540

45 + 8 girdles = 53 facets

2-fold, mirror-image symmetry

96 index

L/W = 1.330 T/W = 0.829 U/W = 0.499

P/W = 0.701 C/W = 0.258

Vol./W³ = 0.661

PAVILION

1	90.00°	96-48	Size to Width
2	90.00°	24-72	Size to Length
3	63.00°	96-48	Locate girdle
4	63.00°	24-72	Level girdle, MP 1-2-3
5	53.00°	96-48	Cut as required
6	53.00°	24-72	MP 3-4-5
7	43.00°	96-48	Cut as required
8	43.00°	24-72	MP 5-6-7
9	53.00°	12-36-60-84	MP 5-6-7-8
10	63.00°	12-36-60-84	MP 3-5-9
11	90.00°	12-36-60-84	MP 1-3-10-2, level girdle

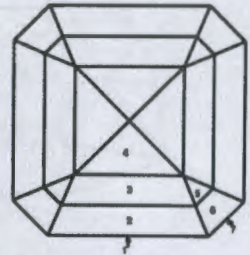
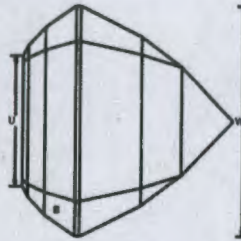
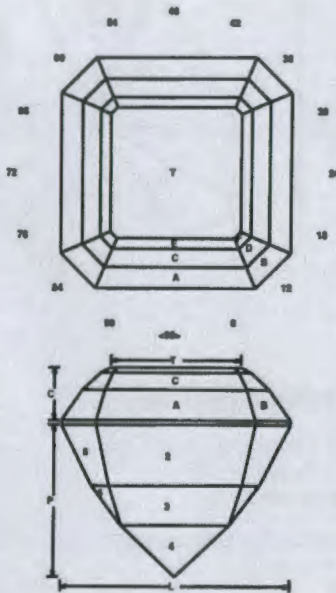
CROWN

A	55.00°	96-48	Set girdle thickness
B	55.00°	12-36-60-84	Level girdle
C	55.00°	24-72	Level girdle
D	42.00°	96-48	Cut as required
E	42.00°	12-36-60-84	Level 2nd tier
F	42.00°	24-72	Level 2nd tier
G	27.00°	96-48	Cut as required
H	27.00°	12-36-60-84	Level 3rd tier
I	27.00°	24-72	Level 3rd tier
T	0.00°	Table	Cut as required to set 3rd tier & table

SECTION: I.9B.1, N.9B.2, STANDARD SQUARE STEP CUT WITH CUT CORNERS

MATERIAL – MM SPINEL

FACETS - 53: MEETS - 45 (Crown - 24, Pavilion - 21)



Standard Square Step Cut with Cut Corners

Angles for R.I. = 1.720

45 ÷ 8 girdles = 53 facets

4-fold, mirror-image symmetry

96 Index

L/W = 1.000 T/W = 0.565 U/W = 0.565

P/W = 0.656 C/W = 0.228

Vol./W³ = 0.442

PAVILION

1	90.00°	96-24-48-72	ECED, set size
2	63.00°	96-24-48-72	Locate girdle
3	53.00°	96-24-48-72	Cut as required
4	43.00°	96-24-48-72	Cut as required to PCP
5	53.00°	12-36-60-84	Meet 3 - 4
6	63.00°	12-36-60-84	Meet 2 - 3 - 5, level tier
7	90.00°	12-36-60-84	Meet 1 - 2 - 6 level girdle

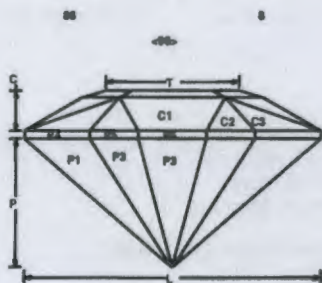
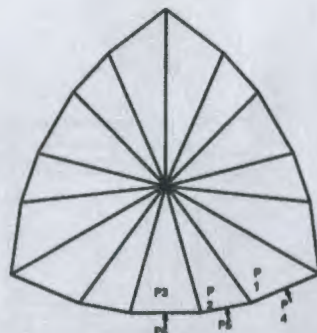
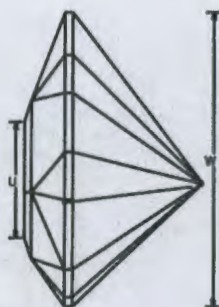
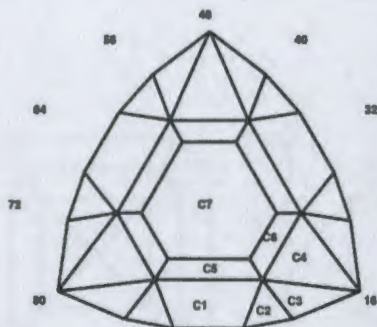
CROWN

A	55.00°	96-24-48-72	Set girdle thickness
B	55.00°	12-36-60-84	Level girdle thickness
C	42.00°	96-24-48-72	Cut as required
D	42.00°	12-36-60-84	Meet A - B - C level tier
E	26.60°	96-24-48-72	Cut as required
F	26.60°	12-36-60-84	Meet C - D - E level tier
T	0.00°	Table	Cut as required

SECTION: O.10.1 – IMPROVED SIMPLE TRILLION

MATERIAL – AMETHYST

FACETS - 55: MEETS - 37 (Crown - 21, Pavillon - 16)



IMPROVED SIMPLE TRILLION

by Jim Perkins

Angles for R.I. = 1.540

40 + 15 girdles = 55 facets

3-fold, mirror-image symmetry

96 index

L/W = 1.010 T/W = 0.453 U/W = 0.392

P/W = 0.438 C/W = 0.137

Vol./W³ = 0.177

PAVILION

P1 43.40° 06-26-38-58-70-90

Create PCP

P2 45.40° 03-29-35-61-67-93

Meet at PCP

P3 46.40° 96-32-64

Meet at PCP

P4 90.00° 06-26-38-58-70-90

Close corners, level girdle.

P5 90.00° 03-29-35-61-67-93

MP, P1, P4

P6 90.00° 96-32-64

MP, P2, P5

CROWN

C1 35.00° 96-32-64

Set girdle thickness

C2 37.70° 03-29-35-61-67-93

MP C1, P6 level girdle

C3 35.50° 06-26-38-58-70-90

MP C2, P5, level girdle

C4 20.70° 16-48-80

MP C3, P4

C5 17.70° 96-32-64

MP, C1, C2

C6 17.70° 16-48-80

MP C3, C4

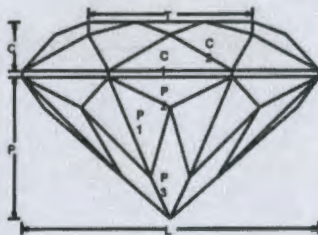
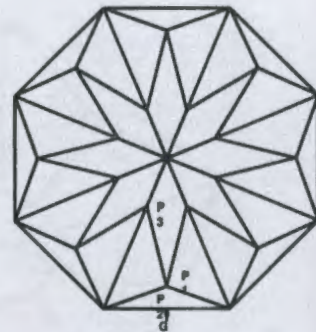
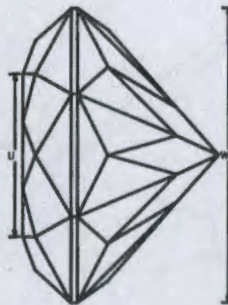
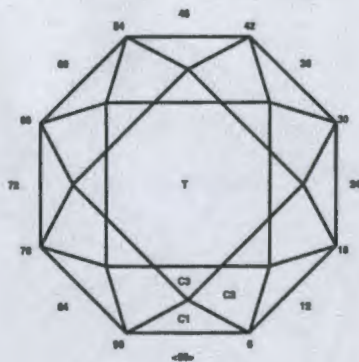
C7 0.00° Table

Cut to size

SECTION: I.10.2 – MOUNT IDA BARION FOR QUARTZ

MATERIAL – CITRINE

FACETS - 65: MEETS - 49 (Crown - 24, Pavillon - 25)



Mount Ida Barion for Quartz

by Jim Perkins 2012

Angles for R.I. = 1.540

57 + 8 girdles = 65 facets

8-fold radial symmetry

96 index

L/W = 1.000 T/W = 0.553 U/W = 0.553

P/W = 0.476 C/W = 0.163

Vol./W³ = 0.252

PAVILION

P1 43.00° 03-09-15-21-27-33-39-45-
51-57-63-69-75-81-87-93

G 90.00° 96-12-24-36-48-60-72-84

P2 55.00° 96-12-24-36-48-60-72-84

P3 41.00° 96-12-24-36-48-60-72-84

Create TCP

Set size

Meet P1, G

Form PCP meet P1, P2

CROWN

C1 48.00° 96-12-24-36-48-60-72-84

C2 34.00° 06-18-30-42-54-66-78-90

C3 20.00° 96-12-24-36-48-60-72-84

T 0.00° Table

Set girdle thickness

Meet C1, G

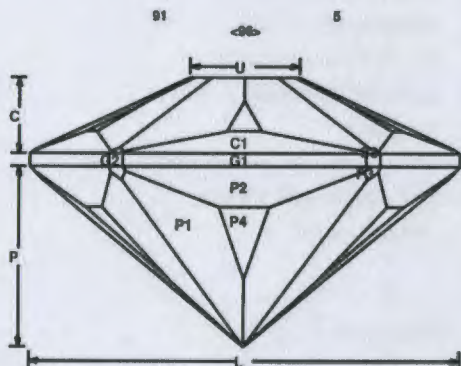
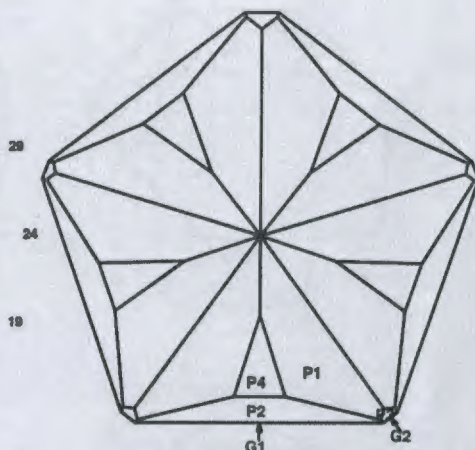
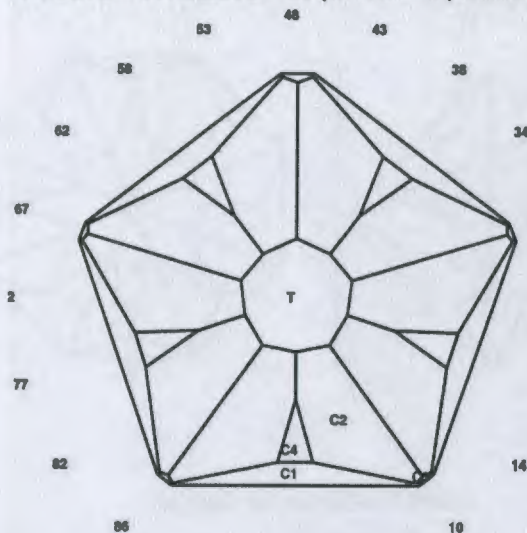
Meet C1, C2

Meet C2, C3

SECTION: N.10.3 – SAKURA 96

MATERIAL – NATURAL COLOURED QUARTZ

FACETS – 61: MEETS – 21 (Crown - 10, Pavillon - 11)



Sakura 96

Marco Voltolini

Angles for R.I. = 1.540

51 + 10 girdles = 61 facets

5-fold, mirror-image symmetry

96 index

L/W = 1.058 T/W = 0.275 U/W = 0.270

P/W = 0.444 C/W = 0.186

Vol./W³ = 0.214

PAVILION

G1 90.00° 96-19-38-58-77 Cut a pentagonal prism, be precise

G2 90.00° 10-29-48-67-86 Cut the edge of the pentagon a little....

P1 41.00° 03-16-22-35-41-55-61-74-80-93 CTP

P2 57.21° 96-19-38-58-77 Set girdle, cut to virtual meetpoint with P1

P3 52.00° 10-29-48-67-86 Be careful to cut these...

P4 42.15° 96-19-38-58-77 Cut to look good

CROWN

C1 43.71° 96-19-38-58-77 Set girdle width

C2 26.00° 03-16-22-35-41-55-61-74-80-93 Virtual meetpoint with C1...

C3 43.71° 10-29-48-67-86 Cut these small facets to meet the girdle

C4 26.85° 96-19-38-58-77 Cut to look good, be careful to let enough room for the table

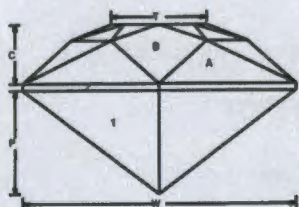
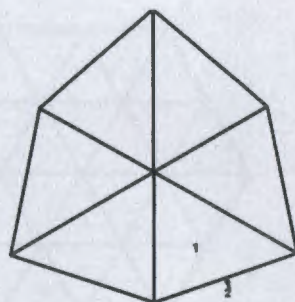
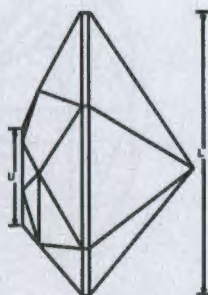
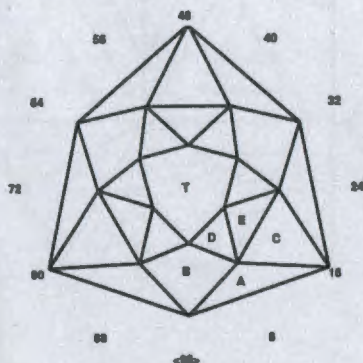
T 0.00° Table Cut a small table

This information is courtesy of <href=<http://gemologyproject.com/>>The Gemology Project

SECTION: J.10.4 - TRILLED

MATERIAL – ANY NATURAL QUARTZ

FACETS - 34: MEETS - 25 (Crown - 18, Pavilion - 7)



Trilled

by Marco Voltolini

Angles for R.I. = 1.540

28 + 6 girdles = 34 facets

3-fold, mirror-image symmetry

96 index

L/W = 1.027 T/W = 0.352 U/W = 0.352

P/W = 0.377 C/W = 0.214

Vol./W³ = 0.189

PAVILION

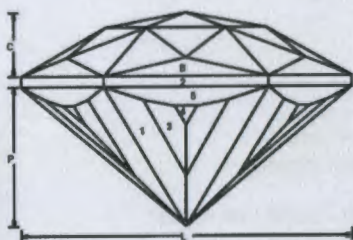
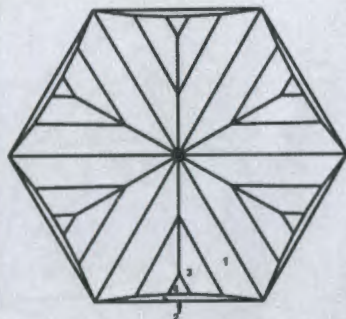
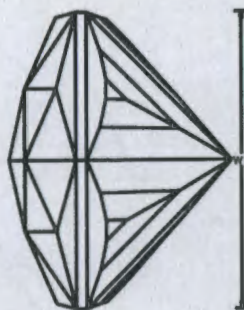
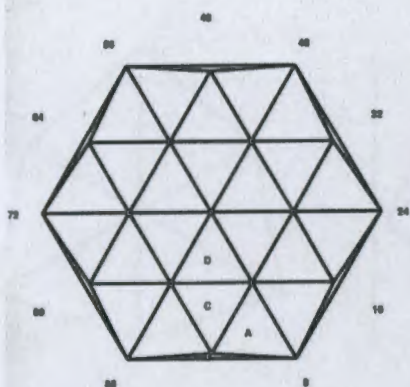
1	41.00° 05-27-37-59-69-91	Create TCP
2	90.00° 05-27-37-59-69-91	Set stone size

CROWN

A	52.43° 05-27-37-59-69-91	Set girdle thickness
B	40.00° 96-32-64	Meet 2, A
C	28.24° 16-48-80	Meet 2, A
D	18.73° 12-20-44-52-76-84	Meet A, B, C
E	22.67° 16-48-80	Meet A, B, C, D
T	0.00° Table	Meet B, D & D, E

SECTION: O.11.1 – HARD ROKU
MATERIAL – NATURAL BLUE TOPAZ

FACETS - 72: MEETS - 32 (Crown - 19, Pavillion - 13)



PAVILION

Hard Roku

Marco Voltolini

Angles for R.I. = 1.610

66 + 6 girdles = 72 facets

6-fold, mirror-image symmetry

96 index

L/W = 1.155

P/W = 0.485 C/W = 0.222

Vol. /W³ = 0.287

1	41.00° 04-12-20-28-36-44-52-60-68-76-84-92	Centerpoint
2	90.00° 96-16-32-48-84-80	Set stone size
3	42.17° 02-14-18-30-34-46-50-62-66-78-82-94	No meets (cut even "steps")
4	44.00° 96-16-32-48-64-80	No meets
5	69.34° 96-16-32-48-64-80	Level girdle

CROWN

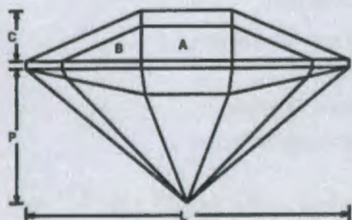
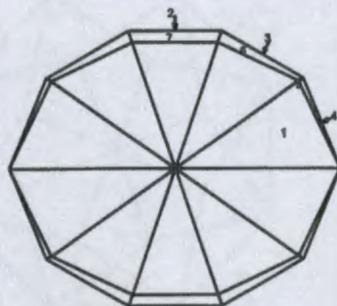
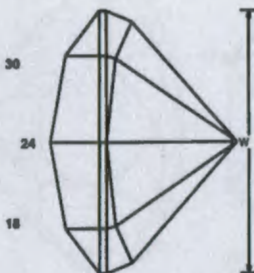
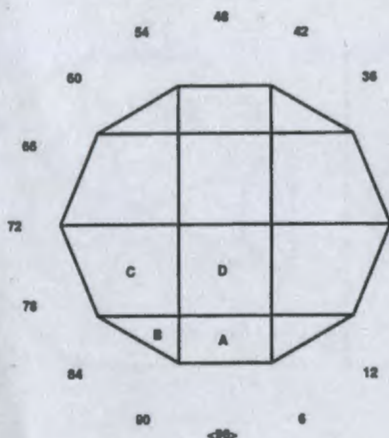
A	30.00° 05-11-21-27-37-43-53-59-69-75-85-91	Set girdle thickness
B	73.62° 96-16-32-48-64-80	Level girdle
C	23.67° 96-16-32-48-64-80	Meet B
D	12.36° 96-16-32-48-64-80	Meet A

This information is courtesy of <http://gemologyproject.com/> The Gemology Project

SECTION: I.11.2 – SHOUGA

MATERIAL – COLOURED CUBIC ZIRCONIA

FACETS - 42: MEETS - 35 (Crown - 16, Pavilion - 19)



Shouga

by Marco Voltolini

Angles for R.I. = 2.160

32 + 10 girdles = 42 facets

2-fold, mirror-image symmetry

96 index

L/W = 1.199 P/W = 0.493 C/W = 0.185

Vol./W³ = 0.278

PAVILION

1	41.00°	96-10-19-29-38-48-58-67-77-86
2	90.00°	96-48
3	90.00°	08-40-56-88
4	90.00°	18-30-66-78
5	64.20°	18-30-66-78
6	65.67°	08-40-56-88
7	66.42°	96-48

CROWN

A	36.73°	96-48
B	40.75°	08-40-56-88
C	25.00°	18-30-66-78
D	10.12°	96-48

Create centerpoint

Set stone size. Cut OMNI

The barion "wings": level girdle

Set girdle thickness

Level girdle

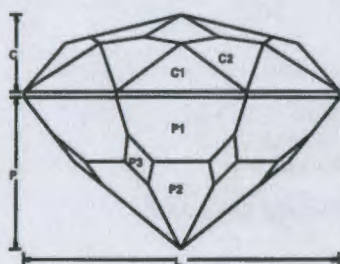
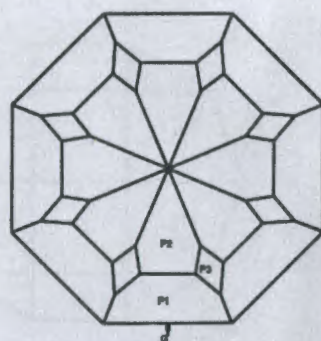
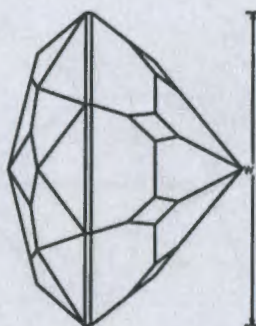
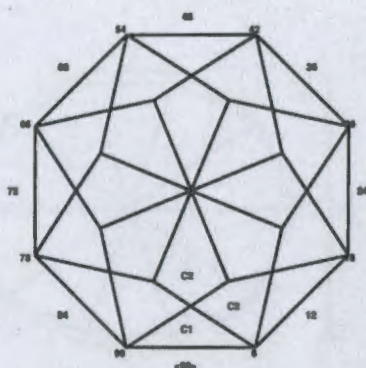
Meet B

This information is courtesy of <href=<http://gemologyproject.com/>>The Gemology Project

SECTION: N.11.3 – APEX OCTAGON

MATERIAL – COLOURED CUBIC ZIRCONIA

FACETS - 56: MEETS - 26 (Crown - 17, Pavillion - 9)



APEX OCTAGON

by Sammy Fangrath (1984)

Angles for R.I. = 2.160

48 ÷ 8 girdles = 56 facets

8-fold, mirror-image symmetry

96 index

L/W = 1.000 P/W = 0.479 C/W = 0.243

Vol./W³ = 0.277

PAVILION

P1 52.00° 96-12-24-36-48-60-72-84

Create TCP

G 90.00° 96-12-24-36-48-60-72-84

Set size

P2 39.00° 96-12-24-36-48-60-72-84

Form level & PCP

P3 43.00° 06-18-30-42-54-66-78-90

Create floating facets as required

CROWN

C1 49.00° 96-12-24-36-48-60-72-84

Set girdle thickness

C2 37.00° 06-18-30-42-54-66-78-90

Meet C1, G

C3 14.00° 96-12-24-36-48-60-72-84

Meet C1, C2, form crown culet

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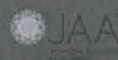
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THE OLD COAL MINER'S LAMPS

Mining has always been a hazardous occupation whether in the search of minerals or coal. The depth at which miners worked, the hot airless conditions, the total darkness, all created an environment of great danger though things have improved over the last century and a half. Roman miners would take seashell lamps underground so they could see. Initially, in the 1600s anyway, mines blowing up were blamed on the devil.



For those attending the GEMBOREE 2017 in Lithgow New South Wales you will see a giant miner's lamp attached to the Lithgow Visitors Information Centre located on the Great Western Highway.

Every day that workmen went down the mine they faced death from cave-ins and collapses, explosions, lack of oxygen and fresh air and accidents in removing the material to be hauled up to the surface. Even after miners gave up the mining it was highly likely that they could be subject to the fatal miner's lung conditions and diseases such as pneumoconiosis or Black Lung Disease.

Also working for years in a poorly illuminated space meant that the miners ended up with eye complaints. Ironically the first piece of safety 'equipment' was the humble yellow canary which would be carried down in its cage by the miners. As long as it whistles away all was well but if it stopped and died it was time to get out – fast. The idea of using the birds was suggested by John Haldane. The canary in the British Isles was used till the mid 1980s when gas detectors were installed in mines.

When mining for coal there was a fair chance that one could be killed or badly injured from a methane gas explosion which could well be caused by the flame from the miner's own lamp. Amongst numbers of

mine owners, officials and even miners themselves there was a prevailing ignorance of the noxious gases that could exist in mines and the deeper they went the worse they got. In the late 19th and 20th century there were many instances, both here in Australia and around the world, of explosions in coal mines.

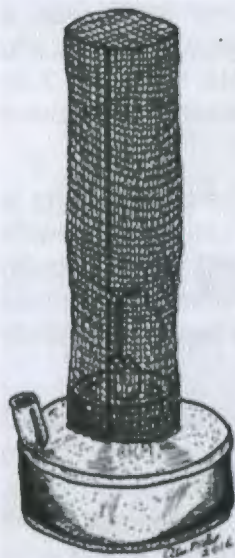
Overseas the first type of lamp used in mining was the grease lamp in the 1700s based on a saucer to hold the 'grease'. Later very unsafe candles were used and placed in crevices or attached to the support timbers. They were even attached to the miner's leather and canvas headgear. The 1850s was a turning point for miner's lamps, especially those lamps used in the coal mines.

The candle-holder was used in coal mines, but especially in the gold mines along the Turon River where one can find them still driven into the walls, though they were very hazardous within the coal mines. Constructed of iron, and often made by the mine's blacksmith, using iron from about $\frac{1}{4}$ inch to $\frac{1}{2}$ inch in rare cases the smithy would work the rod into a looped handle to hold the unit and a sharpened point on the other. The point allowed it to be driven into the wall of the mine or hung on some protruding material in the mine. Commonly a hook was incorporated to hang the candle unit from a wall or timber supports. Others had a hook underneath to hang one's water bottle or some other item.

The Scottish miners developed a cap lamp that looked a bit like a small teapot which held the oil. The spout was used to push in the wick. These oil wick lamps appeared around the 1850s and could be fitted onto the miner's headwear using its wire hook mechanism. They



did not give out much light at all, they were very smoky and again they were unsuitable in coal mines as the open flames ignited the methane gas. Despite this they had become reasonably popular and were still being used after the Great War in some mines overseas as they were cheap to buy and supply with oil.



Definitely the one of three inventors who were to make the greatest difference to lighting coal mines was Sir Humphry Davy, an inventor and the creator of the Davy lamp in 1815. He came up with the idea of a lamp enclosed in wire gauze, based on his thinking that a piece of gauze around the flame would cool down the flame, reducing its actual temperature before it had any interaction with any fire damp (flammable Methane gasses that explode). Initially unbeknown to Davy, an Irishman, William R. Clanny, invented his own design, some ideas of which Davy used and acknowledged as such.

Davy's prototype contained a candle but he soon changed to oil. To stop miners inadvertently opening their safety lamp they were locked and on many old lamps you can see where the

padlock was attached.

George Stephenson, a Scotsman, began working down the mines at an early age and initially received no schooling. Around 20 years of age he learnt to read and write. He easily understood machinery and in 1813 began working on a safety lamp of his own design. Stevenson used small metal tubes instead of the gauze wire and he put glass around the flame. He produced several types before getting it how he wanted with his lamp being known as the 'Geordie' lamp.

Several people were looking at the problem of explosions in coal mines at the same time as Davy but his design also allowed miners to check for the existence and concentration of some dangerous gasses, including carbon dioxide by the colour of the flame. Miner's soon knew if their lamps went out there was trouble and working conditions were not safe.

Despite their development it seems miners were not too keen on taking them into the pit for several reasons, the main ones being they were too heavy and cumbersome and were too large to be attached to their headwear. Also, as with most of the early miner's lights they didn't give out much light. Still, numbers of companies were formed to manufacture the miner's safety lamp, often with small modifications and improvements such as safety bonnets and an internal flint spark igniter. Lamps can be seen today with names such as Hailwood and

Ackroyd, Wolf, C. Cornill, Koehler, E. Thomas & Williams, Patterson, Hughes Brothers, Blackman, Protector, John Davis & Son and Cambrian Lamp Works.

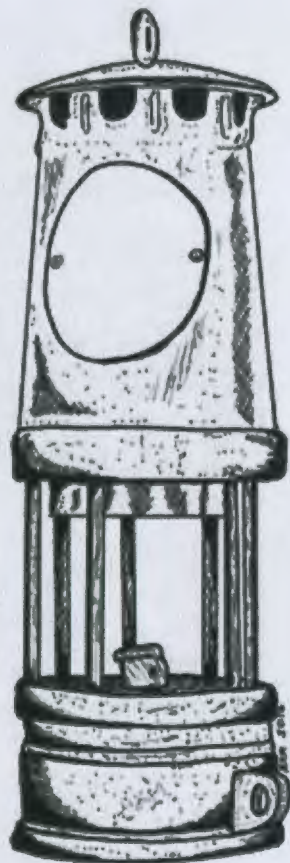
Later carbide lamps were developed which worked on the principle of using calcium carbide which reacted with water, the reaction producing acetylene gas which when ignited produced a clean, white flame.

The method had been discovered as early as 1836 by Edmund Davy but it was the mid 1890s before it was really commercially available. It was the 1900s before mining lamps appeared. Basically a carbide lamp consisted of a pair of chambers, the upper chamber holding the water and a lower chamber holding the crushed calcium carbide (which had to be replenished once or twice a shift.)

The resulting gas was piped to the burner where it was lit giving a brighter light, no carbon monoxide gas and it used less of the precious oxygen in the mine. By controlling the amount of water via a small tap the flame could be made brighter.

Many of these lamps incorporated a reflector to concentrate the light. Miners often carried extra water and carbide to refill the light whilst underground at the coalface. After World War One many of the carbide miner's lamps were phased out and by the early 1930s the miners were using battery power developed by Edison.

The company came up with the Edison Cap Lamp comprising the acid battery which they enclosed in a self-locking metal case which was attached to the miner's belt. The lamp and the battery were attached by a flexible cable. Should the lamp glass break the unit disconnected itself. Initial problems encountered were the unreliable bulbs and leaking batteries.



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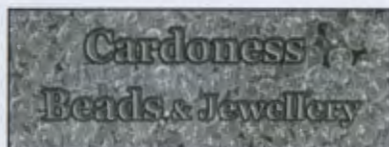
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LLOYD'S BURRAGA COPPER MINE AND LITHGOW

Contemporary Report from 22nd October, 1901.

From Lithgow I journeyed to Burraga, where I found mining matters very brisk. At the Lloyd Copper Mine the erection of plant is proceeding rapidly and pretty soon the reduction of ore will take place on a very much larger scale than at any time previously in the history of the mine.

Typical miner's hut at Burraga (right).

The Lloyd Copper Mine was purchased for £100,000 cash two years ago and shortly afterwards about £70,000 was spent in the erection of water-jacket furnaces and other plant.



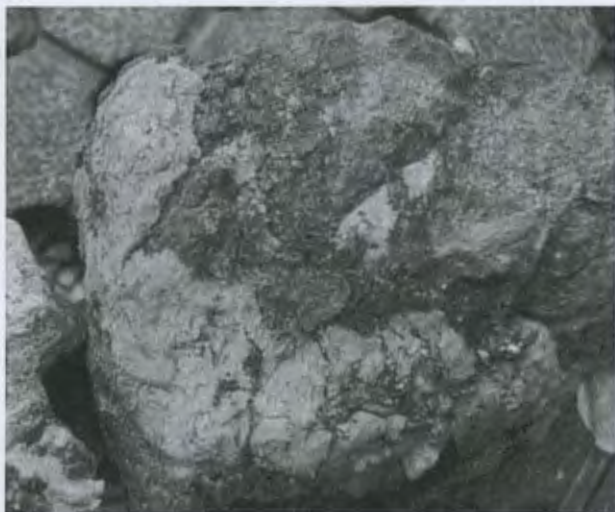
When the plant had nearly been completed it was found impracticable to reduce the ore by the jacket furnace process. Therefore an entirely new scheme was put in motion. A good deal of the original plant will come into use, but a sum of about £50,000 is being expended in the erection of a concentrating plant. At present there are 298 men employed in and about the mine, 14 large teams on the roads bringing supplies and taking copper matte away to Lithgow, and there are 27 teams bringing wood to the mine. £1700 a fortnight is paid in wages. In two years 6400 tons of goods have been brought to and taken away from the mine.

From the time of purchase up to the present the company have, underground, carried on a vigorous system of development, and at the present time not only are the workings in splendid order, but some hundreds of thousands of tons of ore have been developed in quite new sections of the property.

Whilst all this has been going on a steady production of copper has taken place, amounting in the two years to £107,374. For the year ended 10th June last the output of copper ore was 19,100 tons, of which 12,600 went to the roast-heaps and 11,000 to the smelters. The amount of ore not treated went to the already large second grade dump heap, and will be put through the new concentrating plant. From the amount of ore treated 826 tons fine copper was produced. The

production of copper since the date given above keeps about the same whilst the accumulation of secondary ore increases also.

The vertical depth of the Lloyd mine is 521ft., but the main shaft is sunk on the incline, and is 1550ft. to No. 10 level, below which point the shaft is still being sunk. At various distances apart levels have been driven in massive bodies of solid sulphide ore.



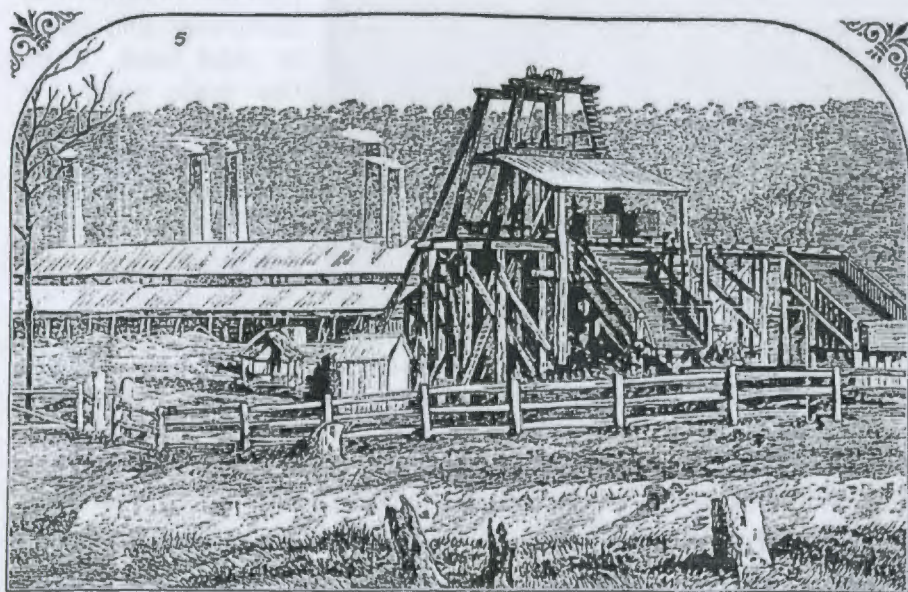
Copper ore from Burrage (left). By the beginning of the New Year the whole of the new plant ought to be completed and ready to start work. From the main shaft the ore is to be trucked to a chute which runs to the bottom level of the huge pile of second grade ore, from there it is hauled to the bins of

the dressing plant, which is close at hand. From the bins the ore passes through two Jaques rockbreakers. The crushed ore then falls on two Robins conveyor belts. On these belts the richest and least siliceous portions of the ore are picked out, the residue falls over the end of the belts to two other Jaques stonebreakers set to crush to a smaller gauge. The ore is then screened by means of a concussion screen.

The crushed ore from the previous screens pass on to Aultmann's balanced screens, which size the ore into grades suitable for jigging. Weir tables deal with the heavier grades.

The dressing plant is equipped with an efficient steam plant consisting of two of Babcock's boilers capable of generating 300 h.p. The prime mover for running the mill is a compound condensing engine made by the Austral Otis Company, of Melbourne. This engine is coupled direct on to the main shaft of the mill and a large dynamo of over 100 h.p. is driven from the flywheel of this engine. This supplies the motor current for the electro motor.

The intended capacity of the mill is 250 tons per day of crude ore. For the purpose of providing the plant with a never-failing supply of water a large reservoir or dam has been constructed at Thompson's Creek, about three miles north-east of the mine. The dam cost £15,000 to construct and when full will hold 75 million gallons which can gravitate to the works through 9in. pipes. Ore is mechanically delivered by feed screws to the furnaces and is passed through the furnaces by mechanical rabblers. It then drops into a brick hopper in the floor of the furnace shed, requiring no labour beyond that of firing. From the hoppers of these calciners the ore is trucked to two steel hoppers, supported over the arches of the reverberatory furnaces of which there are five, of splendid design.



At present matte is sent to Lithgow for refining purposes (*above behind Eskbank's poppet head*). It is intended in future that the matte will be blown to blister copper in a converter which is to be placed on a suitable site close to the reverberatory smelters.

Thomas Brown opened his first coal mine at Eskbank in 1868, north of the railway line, and later supplied coal to James Rutherford and his other investors to inaugurate their ironworks. Brown's second coal mine (*above in front of the copper smelting works*) was opened in 1874. This coal mine later supplied the coal to power the Lloyd's Copper Smelting Works at Lithgow.

MEAT WORKS LITHGOW



Today we take frozen food for granted but in the 1860s the public was sceptical. It was an Englishman named Thomas Sutcliffe Mort who had arrived in the Southern Colony in February 1838 aged 22 to take up a clerk's job. By the mid-1860s he was acutely aware of the variable livestock prices so he decided to experiment with freezing apparatus. In 1868 he despatched a trial shipment of frozen meat to London. Later he set up an abattoir and refrigeration works at Esk Bank. He bought land to the north of Farmer's Creek which was adjacent to Esk Bank for sheep and cattle holding paddocks and where he constructed his freezing works 1874 - 1875.

To celebrate the opening on 2nd September, 1875, of his freezing depot at Darling Harbour, Mort brought up the Sydney media to Lithgow on the steam train where the 300 dined on food, some of which had been frozen some 18 months previously. The idea was a great success. (Meat Works Lithgow – November 1879 - ATCJ)



There are two main lines of argument in the paper. The first is that the evidence is consistent with the hypothesis that the observed pattern of variation in the number of offspring per female is due to variation in the number of eggs laid. The second is that the evidence is consistent with the hypothesis that the observed pattern of variation in the number of offspring per female is due to variation in the number of eggs that survive to hatch. The first line of argument is based on the fact that the number of eggs laid per female is a good predictor of the number of offspring per female. The second line of argument is based on the fact that the number of eggs that survive to hatch is a good predictor of the number of offspring per female. The paper concludes that the evidence is consistent with the hypothesis that the observed pattern of variation in the number of offspring per female is due to variation in the number of eggs laid.

The paper also discusses the possibility that the observed pattern of variation in the number of offspring per female is due to variation in the number of eggs that survive to hatch. This possibility is based on the fact that the number of eggs that survive to hatch is a good predictor of the number of offspring per female. The paper concludes that the evidence is consistent with the hypothesis that the observed pattern of variation in the number of offspring per female is due to variation in the number of eggs laid.



Lithgow is a vibrant country town as seen from the air (top). **Middle** – Lake Wallace perfect for sailing, fishing, walking and bird watching. **Bottom** – Glo worm tunnel.




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