“NEPHRITE” JADE IN BRITISH COLUMBIA

G.A.C. Cordilleran Breakfast Talks

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NEPHRITE

- Not a separate defined mineral
- Nephrite is an Amphibole - Refers to a Tremolite – Actinolite mixture.
- Texture is fine felted crystals
- Hard and tough
- May contain minor other minerals, magnetite, chromite, chrome mica, garnet, chlorite, diopside
NEPHRITE TEXTURE

MICROSCOPIC FEATHERS
JADEITE

FORMS IN MUCH THE SAME WAY AS NEPHRITE

• BUT: Higher pressure and different host
• A pyroxene mineral
• Harder than nephrite 6.5-7
• Granular crystalline texture
• Multicolours, green grey bluish, lavender
• Not found as gem in Canada (Yet)
• Best quality, bright green is RARE
• Found mainly Myanmar (Burma) some in Guatemala
COMPARISON

Nephrite Jade

- Chemical Composition: $\text{Ca}_2(\text{Mg,Fe})_5\text{Si}_8\text{O}_{22}(\text{OH})_2$
- Hardness: 6–6.5
- Colour: Green Hues
- Most Sought After Colour: Emperor Green
- Diaphaneity: Translucent

Jadeite

- Chemical Composition: $\text{NaAlSi}_2\text{O}_6$ or $\text{Na(Al,Fe}_3^+\text{)Si}_2\text{O}_6$
- Hardness: 6.5–7
- Colour: Coloured by impurities - Wide range
- Most Sought After Colour: Emperor Green
- Diaphaneity: Translucent

Electra Stone presentation
JADEITE
Jadeite Colours
ABORIGINAL USE

- Chisels referred to as “Celts”
- Many found in Northern Alberta
- Not many found in BC
- Valuable so traded as high value objects

Found by Dietrich Schultz
Fraser River, Agassiz BC 1962
Jade Celts in Alberta

13 known and two suspected occurrences of nephrite artifacts in Alberta, all of which are ground stone celts. No known in situ nephrite in Alberta, so probably from BC and Alaska. Found in fields but not in Archeological sites.
Chinese Jade

Nephrite Jade has an enormous cultural significance in China. There are many jade locations. White jade artifacts are very valuable and seem to come from Xinjiang Province, south side of Gobi Desert.

tomb of the Filial Prince of Liang (Liu Wu, d. 144 BC), now at the Henan Provincial Museum
CHINESE ARTIFACTS

冰清玉洁 (bingqing yujie), which directly translates to "clear as ice and clean as jade" is a Chinese saying that means to be pure and noble. 亭亭玉立
JADE LOOK-ALIKES

• Phillipine Jade (talc/sericite)
• Aventurine (Quartzite with Fuchsite)
• Diopside
• Maw Sit Sit (Mixture)
• Serpentine
• Bowenite (serpentine)
• Vesuvianite (Happy Camp)
Jade misnomers

- “African Jade” - a massive variety of green grossularite garnet found in the Transvaal Province of South Africa
- “Amazon Jade” - amazonite, a blue-green microcline feldspar
- “American Jade” - californite, a variety of vesuvianite
- “Bowenite Jade” - a variety of serpentine resembling nephrite
- “Garnet Jade” - a massive variety of green grossularite garnet
- “Honan Jade” - a name used for a variety of jade substitutes including jade in quartz, serpentine, soapstone
- “Mexican Jade” - green-dyed calcite or greenish travertine
- “Indian Jade” - aventurine quartz
- “Korean Jade” - a variety of jade look-alikes including glass, soapstone and serpentine
- “Manchurian Jade” - soapstone
- “Oregon Jade” - green jasper, green grossularite or other jade look-alikes found in Oregon
- “Serpentine Jade” - varieties of serpentine that look like jade
- “Soochow Jade” - name used for a variety of jade substitutes including jade in quartz, serpentine, soapstone
- “South African Jade” - green grossularite found in the Transvaal Province of South Africa
- “Transvaal Jade” - green grossularite found in the Transvaal Province of South Africa
Phillipine Jade and Chrysoprase
OTHER GREEN STONES

Happy Camp Jade - California

Vesuvianite BC

Adventurine - India

Fluorite NFLD
MAW SIT SIT “JADE”

Maw sit sit is not a jade. Instead, it is a metamorphic rock composed mainly of kosmochlor, clinochlore, chromian jadeite, and albite, with small amounts of eckermannite, chromite and other minerals.

To date, all known maw sit sit deposits are in a small area of Kachin State of northern Myanmar (formerly known as Burma).
GREENLANDITE

Greenlandite was discovered in the 1960 during the survey of the lage iron deposit, Isukasit, north of Nuuk. Greenlandites’ two components are quartz (SiO2) with a hardness of H=7 and fuchsite (K(Al,Cr)2AlSi3)10(OH,F)2) with a hardness of H=2.5. As a result the stone is very hard and can readily be polished to a smooth surface. Varying green (fuchsite) and white (quartz) schlieren (streaks) in the same piece can produce many variants of the stone.

http://grstones.tripod.com/GVHS.jpg
SERPENTINE
MAP OF BC AND JADE DEPOSITS

Dease lake area

Omineca area

Fraser River area
ORIGIN OF JADE

Serpentine bodies probably originate as “Ophiolites) subducted then emplaced along major tectonic faults. Serpentine and wall rock then altered by hot solutions

TWO TYPES OF NEPHRITE FORMATION

• “D” TYPE (DOLOMITIC SOURCE)
  • Lighter colors to white

• “S” TYPE: (SERPENTINE + Host Rock) (Metasediments, Intrusives etc.)
  • Darker colors, green to Black
ALTERATION AND SHEARING
Along major tectonic Faults

Figure 5. Development of contact reaction zones.

From: Stan Leaming
TYPICAL BC JADE DEPOSITS

Source: Harlow
ADDITION OF CALCIUM AND SILICA
FRASER RIVER AND COQUIHALLA

First source of Nephrite in BC
Placer jade cobbles and boulders
Several sources along Fraser
Ultramafic bodies along Fraser Fault
Coquihalla, Lillooet, areas
Occasional jade implements found today
Potential – Harrison Lake, Hope, Bralorne
Southern BC

- New discovery 2017 Jones Creek (Abraham Ruben)
FINDING JADE

1. Geology maps
2. Serpentine Belts
3. Stream Floats
4. Diligent Prospecting
5. Magnetometer surveying
6. Packsack Drills
7. Diamond saws
8. Diligence and Luck !!!
JADE QUEEN MINES LTD. 1968

- O’Ne-ell Creek
- Northwest of Fort St. James. Middle River
- Jade was found in 1968
- by the late Win Robertson (The Jade Queen)
- Limited Production (Mike Beley – Manex Mining 1968-1969, 35 tons by helicopter
- Athabasca Columbia Resources
- Later owned by Jim Thomas/Lorne Warren
- In 1995, Global Metals Ltd. drilled 29 shallow holes
- Now owned by Aimin Liao, John Bakus and others
JOHN FRASERS MAP

J.R.FRASER 1972

FIG.12.
GEOLOGY
O’NE-ELL CREEK NEPHRITE
DEPOSIT
O’NE-ELL CREEK, BRITISH COLUMBIA
DIAMOND SAW AT O’NE-ELL CREEK

J.R. FRASER, 1972
OGDEN MOUNTAIN B.C.

Discovered 1967 by Stan Porayko and Wm, Larry Owen
North Side explored by Larry Barr  (Far North Jade) 1971
Developed to production 1972-74
Several hundred tons production
Some top quality !!
Considerable (cull/industrial) jade left
Lots of Exploration potential
OGDEN MOUNTAIN

CACHE CRREK METASEDS

INTRUSIVE SILL

SERPENTINITIE

TRIASSIC-JURASSIC

Fall River. A difficult crossing!! Photo by Makepeace
HOW NOT TO STAKE A JADE CLAIM

Ogden mountain 1971
THE ORIGINAL DISCOVERY

JADE CAMP AND ORIGINAL PIT
MAGNETOMETER SURVEYS

Mt. Ogden 1974
LARRY BARR 1972 WITH “X-RAY” DRILL

OGDEN MTN 1973
Magnetic Signatures

Magnetic response

A – Cross-section through “main showing”

OGDEN MOUNTAIN JADE CAMP 2015
2ND JADE SITE FOUND 1972

GRANODIORITE SILL OVERLIES SERPENTINITE
DIAMOND SAWS
Serious equipment
Lower Quality jade stockpile 2015
MY 1972 MAP
OF OGDEN MOUNTAIN
Kirk Makepeace with Typical Jade outcrop ready to drill or saw. Serpentine on both sides
Provencher Lake 1974-76

- In Initial prospecting, over 600 boulders were mapped in 2 days. Glacially rafted and deposited near source
- Then painted with letters and numbers
- Then systematically drilled with handheld packsack drills. Probably >1500 boulders drilled ($60/ft)
- Larger boulders drilled and split with steel wedges
- Eyebolts placed and Rebar and Flags (snow)
- Dragged out to Dease Lake by cat in winter
- Inevitably some boulders “High Graded” (stolen)
DEASE LAKE AREA CLAIMS
Polar-Kutcho-Provencher 2017
Magnetic anomalies

SAME AREA AS PREVIOUS MAP – NEPHRITE WITH MAGNETIC (SERPENTINE) BODIES
1974 Drilling boulders
DRILL CORE
Glacially polished boulder
POLAR JADE, DEASE LAKE BC

An 18 tonne boulder of gem-quality jade. Half was used to carve a 9 ft tall jade Buddha.
Green Mountain Jade Camp
Kutcho Creek Airstrip
YUKON TERRITORY

Robert Campbell Highway north of Watson Lake - West of Mile 84
Jade found by Roy Sowden 1973? (Jade Tooth)
Explored by Larry Barr 1974
Outcrops of nephrite in serpentinite
Good to moderate quality
Helicopter access only
Karl Ebner mined a 31.5 ton boulder
Then owned by Max Rosenquist.
Now Owned by Roger Krichbaum, Colorado
Yukon Jade

FRANCES LAKE YT
ARCTIC JADE STRUCTURE

Nephrite in Serpentine in fault zones

LARRY BARR 1974
Yukon Jade
LILLOOET
B.C.

Fraser River
Hell Creek
Marshall Creek
Exploration continues
Earl and Bill Cook
Jim Macdonald
Dave Deering
George Vanderwolf
https://www.youtube.com/watch?v=tD_dwl3gNlA

Don Ingram with jade slabs on Main Street
HELL CREEK – SHULAPS RANGE
HELL CREEK 2018

VIEW FROM THE TOP (7200 FT) AND DRILLER DAVE DEERING
Lillooet Area

ALTERATION AND GOOD QUALITY NEPHRITE
Jade Prospectors and Supporters

Wm Larry Owen
Stan Porayko
Larry Barr
Joe Bell
Win Robertson
Clancy Hubble
John Schussler
Roy Sowden
Kirk Makepeace
Jim Macdonald
Andy Jensen
Paul Bialkoski
Gerry Davis
Hal Komish
Ben Seyward
Lorne Warren
Jim Thomas
Cecil McEwen

Jerry Skopke
Howard Lo
Tony Ritter
Bob Yorke-Hardy
Al Homenuke
Ed Osterlund
Harry Street
George Vanderwolf

Ron Purvis
Lanny Ream
JP Jutras
Shane Ebert
Guil Brett

Many others
DR. STAN LEAMING

- Geologist with Geological Survey of Canada
- Canada's foremost Jade expert
- Retired and 101 yrs old, Kelowna BC
- Jade in Canada and Jade Fever

Stan pauses for a picture on the south side of King Mountain near Provencher Lake, B.C., during the mapping of ultramafic belts in the Dease Lake–Cassiar area in the early 1970s. The summer days are long here, but the season itself is short.
PROVENCHER LAKE 1974

Conrad Provencher – Cassiar
Andy Jensen
Paul Biakoski
John Kubiak
Al Homenuke
Bob Yorke-Hardy
Mohawk Oil
Larry Barr –
Howard Lo
Nephro Jade Canada
Tony Ritter
Ernie HATZL
Cassiar Jade Contracting
Many others

Paul Bialkoski and Howard Lo.
THE LATE STAN PORAYKO

A billionaire in Zimbabwe Dollars
PROVENCHECHER LAKE
Cassiar Jade Contracting – Ernie Hatzl and Tony Ritter
KUTCHO AREA

Kirk Makepeace and daughter Nikki (Gemologist)
JADE CITY

“Jade Fever”

Steve Simonovic and daughter Claudia Bunce

The population of Jade City, B.C., swells to as many as 50 during the mining season.
LETAIN LK. BUNCE MINE SITE

Reclamation Bond $$$$$
Here’s your Hat

World Famous
Jade City B.C.
Other Nephrite Sources

- Washington, Alaska
- Wyoming, California
- New Zealand, Cowell, South Australia
- Korea
- Russia
- Aceh Province Indonesia
- Pakistan
- Macedonia
- Newfoundland
Figure 2-8. Nephrite sources in Washington
SIBERIAN JADE

Generally lighter green

Generally lighter green
NEWFOUNDLAND

NEW ZEALAND
NZ WAR CLUBS

OUCH !!!!
ACEH, INDONESIA
MACEDONIA

Frog Skin Texture
NEPHRITE QUALITY

A

B

C

D
Stan Leaming Chart

NEPHRITE GRADE CHART

Properties:
- DESIRABLE:
  - Attractive, solid green colour.
  - No inclusions of accessory or secondary minerals.
  - No fractures.
  - Structurally isotropic.
  - Translucent.
  - Hard (6+) in all parts.
  - Takes a high polish.

- UNDESIRABLE:
  - Mottled, dark or muddy greyish colour.
  - Many inclusions.
  - Many fractures.
  - Structurally anisotropic.
  - Opaque.
  - Soft (<6+) in some parts.
  - Polishes dull.

Deborah Wilson – Carver

http://www.deborahwilson.bc.ca/.

Many other excellent jade carvers in BC
THE B.C. BEARS
ARCTIC LOON AND EGGS

Charles C Min Hu
The Jade Buddha for Universal Peace is the largest Buddha carved from gemstone quality jade in the world. Half of the “Polar Pride” boulder recovered in British Columbia was carved into the famous 4.65-ton “Jade Buddha for Universal Peace.” It was carved in Thailand over a two-year period. It is about 2.5 meters (about 8 feet) tall. Since 2009, the Jade Buddha has been on a tour of more than 15 countries to inspire people to seek peace in their lives.

Courtesy of Jade West Group.
Jade and Health

• Many dubious claims made about jade and health
• Jade powder in cosmetics (beware of asbestos !!)
• Jade healing palm stones
• Pyramids
• Jade rollers
• Jade Yoni Eggs (I’m not going to go into this 😊)
• Jade elixirs, essential oils fragrances
• Far-Infrared rays” 😞
Misc oddities

JADE ROLLER

Heavy Duty Version
Jade Public Companies

• Pacific Bay Minerals (TSXV- PBM)
  – Cassiar and Dease Lake area

• Electra Stone Ltd. (TSXV – ELT)
  – Limited production from Quartz Creek, Kutcho area
  – Cease Traded 2018 Failure to file

• Jade Leader Corp. (TSXV - JADE)
  – Previously Manson Creek Resources
  – Properties Cariboo and Washington State
JADE BOOKS

JADE IN CANADA
S.F. LEAMING
1978

ROGER KEVERNE
CASSIAR JADE CONTRACTING INC.

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ACKNOWLEDGEMENTS AND REFERENCES

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- George Simandl (BCGS)
- The late John Fraser
- Carl Verley
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- http://www.jadeleader.ca
Jade is the Word

• He walks alone. On hills of till.
• Searching the ground. For it is his will.
• He seeks a rock. That the Creator made.
• Some call it Nephrite. Some call it Jade.
• But with a rap from his hammer. The “TING" is heard.
• Only one rock makes that sound.
• Jade, is the word.
Thank You “Yu”.

Chinese Symbol “YU” for Jade

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