Emeralds of the World

extraLapis English No. 2: The Legendary Green Beryl



Precious Gemstone in History Formation of the Unique Green Characteristics of a Rare Beryl

The Most



Emerald Localities Old and New The World's Most Beautiful Emeralds Gemstone Emerald: Treatment, Synthesis

and Identification

Emerald



The Most Valuable Beryl; the Most Precious Gemstone

extraLapis English No. 2 -

with Contributions by

Christa Behmenburg, Lawrence Conklin, Gaston Giuliani, Maximilian Glas, Patricia & Michael Gray, Günter Grundmann, Rupert Hochleitner, Jan Kanis, Lore Kiefert, Karl Schmetzer, Dietmar Schwarz, Zak Swartz, Marc Wilson, Michael Wise and Marisa Zachovay

Translation by

Alfredo Petrov and Günther Neumeier

Photos and Diagrams by

Roberto Appiani, Marcus Budil, Helmut Bürger, Warren Dobson, Gilson Archive, Gaston Giuliani, Maximilian Glas, Konrad Götz, Günter Grundmann, Henry Hänni, Tino Hammid, Rupert Hochleitner, Jan Kanis, Fotodesign Lichtblick, Hwa Ja Nier, Fotostudio Otto, Eckehard Petsch, Harold & Erica van Pelt, Federico Pezzotta, Jeff Scovil, Karl Schmetzer, Dietmar Schwarz, John Sinkankas, Franco Valoti, Stefan Weiss and Debra Wilson



Valued Since Prehistoric Times as the Most Precious of Gemstones: Emerald Whether from ancient India, Greece, Rome or Colombia, emeralds have always been a highly prized gemstone.

This postcard depicts pre-Columbian emeralds from the Calima culture circa 1,000 to 1,500 AD. The largest stone weighs 37 carats.

Stones from the Ronald Ringsrud collection, Saratoga, California; photo Tino Hammid

553.86

G 537 E

IN COLLABORATION WITH LAPIS MAGAZINE, CHRISTIAN WEISE VERLAG, GERMANY AND LAPIS INTERNATION



About Emeralds

Emeralds of the World

World Emerald Occurrences

Beryl and Emerald: Words from India 4 A brief etymology Christa Behmenburg
Emerald on Display
Emerald: Mineralogically a Beryl10 Composition, structure, crystal habit, green beryl and trapiche emerald Rupert Hochleitner
The Origin of Emerald

World Emerald Occurrences
A glossary of emerald deposits
Günter Grundmann and Gaston Giuliani
Colombia: The World's Top Producer 36
Eastern Cordillera Mining Districts
Dietmar Schwarz and Gaston Giuliani
Brazil: Minas Gerais, Bahia, Ceará, Goiás and
Tocantins
Dietmar Schwarz and Gaston Giuliani
Africa: Egypt, Nigeria, Tanzania,52
Mozambique, Zambia, Zimbabwe, South Africa
and Madagascar
Jan Kanis and Dietmar Schwarz

Acknowledgements

The editors and authors express thanks to a number of people with whom we consulted for this edition:

Mineralogy: Frank Hawthorne from the University of Manitoba in Canada and Bernard Charoy from CRPG/CNRS in Vandoeuvre, France

Colombia: Gonzalo Jara of Bogotá, Colombia

Africa: Federico Pezzotta from the Natural History Museum of Milan in Italy

Asia: Brendan Laurs from
Gems and Gemology in
Carlsbad, California;
Dudley Blauwet of
Louisville, Colorado and
Wali Beekzad of San Jose,
California

North Carolina: **James Hill** of Hiddenite, North Carolina

Treatments: Ron Ringsrud of Saratoga, California

The Emerald Ring of Polycrates

Herodotus, Father of History (circa 490 to 420 BC), tells the story of King Polycrates of Samos. The king's luck was legendary, but Amasis, an Egyptian colleague, warned him in a letter, "I am pleased to hear, dear friend, that you are doing well; but your abundance of luck gives me pause for thought, as I fear the jealousy of the gods. So take my advice and protect yourself from luck. Reflect on what you love the most, and whose loss would cause you the greatest pain, and throw it away, so that it will never appear again."

When Polycrates had read the letter and had seen that Amasis' advice was good, he considered which of his royal treasures he cherished most. He discovered that it was the emerald set in the gold ring he wore on his finger and used as a seal. It was the work of Theodoros, son of the Samian Telekles. Polycrates decided to dispose of the ring. He summoned a ship with fifty rowers, boarded and ordered the ship out to sea. When he was far from the island, he took off the ring and with all eyes watching, threw it into the sea. He then returned home and was distraught.

Some days later a fisherman honored him with the gift of a large catch:

The fish was opened by the cook,
Who suddenly, with wondering look,
Runs up, and utters these glad sounds.
"Within the fish's maw, behold,
I've found, great lord, thy ring of gold!
Thy fortune truly knows no bounds!"
The guest with terror turned away.
"I cannot here, then, longer stay, My friend thou canst no longer be!
The gods have willed that thou shouldst die
Lest I, too, perish, I must fly" -

He spoke, - and sailed thence hastily." or so Friedrich Schiller (translation anonymous, 1902) continued the story 2,000 years later. Herodotus did not forget to recount the terrible end suffered by the king on a cross in Magnesia.

C.B.

Pliny: "The Most Beautiful Green!"

Asia: Pakistan, Afghanistan and India 60 Old Mine Emeralds	Emerald Treatments
Dietmar Schwarz and Gaston Giuliani	Lore Kiefert
USA: Hiddenite, North Carolina64 Michael Wise	Mineral Specimen Enhancement82 Marc Wilson
Gemology of Emerald	Laboratory Emeralds84 Karl Schmetzer
What is Emerald? Two perspectives	What is the Price of an Emerald?93 Marisa Zachovay
Defining Emerald	A Cut Named for Emerald
Dietmar Schwarz and Karl Schmetzer	References



According to the more sensational literature, this Colombian emerald specimen once belonged to the legendary Aztec emperor Montezuma II who is supposed to have given it as a gift to the conquistador Hernando Cortez. In commerce, a clever story has always had value.

The specimen without the base measures 16 x 14 cm. The crystal group is not natural but a montage stuck together with pitch. This, however, is precisely what gives the piece its informative value. The individual pieces come from different deposits: from Muzo (with parisite) and from Chivor (with ceriandolomite)!

This was the most noteworthy display specimen in the famous mineral collection of Archduke Ferdinand II (1529-1595), Count of Tyrol, at Ambras Castle. In 1881 his collection was acquired by the imperial museum in Vienna.

Vienna Natural History Museum, cat. no. C-3281; photo by Photostudio Otto

Emeralds of the World

The Most Valuable Beryl
The Most Precious Gemstone

Since antiquity, emeralds have been one of the most highly valued gemstones: the first known mines were those of Cleopatra in ancient Egypt. Two thousand years ago Pliny wrote, "Emerald-green is the most beautiful green of all."





Upper right: emerald crystals and a cut stone (0.99 carat) from Val Vigezzo in the Lepontine Alps, Italy; photo Roberto Appiani

Middle: emerald crystal (12 mm) in mica schist from Gravelotte, South Africa; photo Maximilian Glas

Lower: green beryl or emerald?
A 23 carat cut stone from the Roebling Mine
Upper Merryall, CT, USA;
photo Jeff Scovil



Leading researchers offer insight into many of the aspects of the world of emeralds:

- What is emerald? A portrait of a precious and unique member of the beryl family;
- How does emerald form? The events that conspired to bring about an unlikely outcome;
- Where is emerald found? Worldwide localities including Canada, Namibia and China;
- Where are the richest deposits? Today's market sources: South America, Africa and Asia;
- Is it possible to determine the origin of an emerald? Gemstone emerald: characteristics, inclusions and treatments:
- What separates green beryl from emerald?
 The debate over optical, spectrographic and chemical delineations;
- How are emeralds created in the lab and how can they be recognized? The history, process and detection of synthetic emerald;

Plus etymology, history, legendary giants, local finds and more... extraLapis English No. 2 provides a comprehensive look at this magnificent gemstone.



extraLapis English No. 2: Emeralds of the World ISBN 0-9715371-1-9

Lapis International, LLC • Connecticut • USA