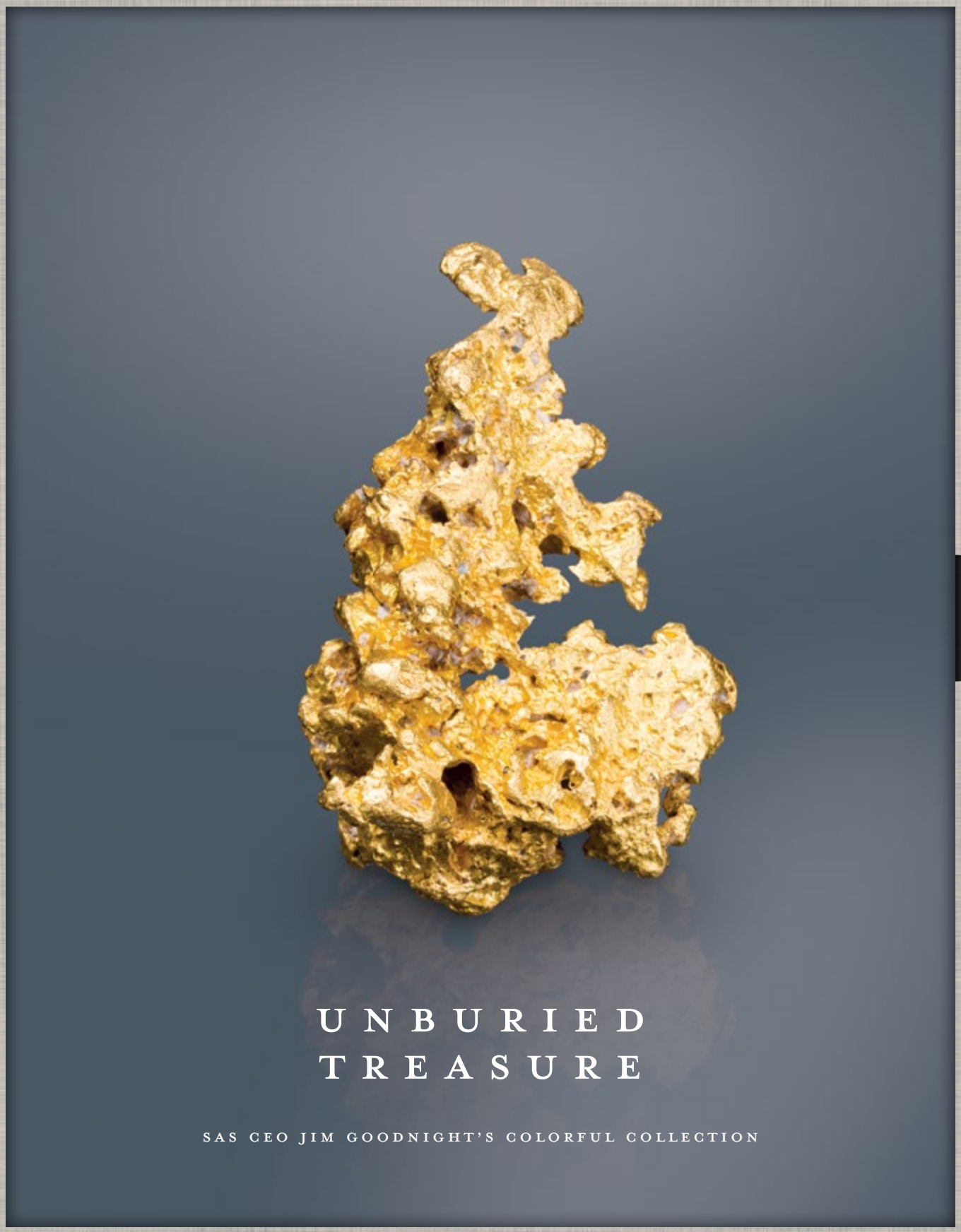

UNBURIED
TREASURE
SAS CEO JIM GOODNIGHT'S COLORFUL COLLECTION

UNBURIED TREASURE

SAS CEO Jim Goodnight's Personal Collection

When SAS CEO Jim Goodnight was a young boy, about 10 years old, he would venture out into the area surrounding his house, on the hunt for small treasures like arrowheads and quartz crystals.

As he grew up, his boyhood fascination with these natural objects took a back seat to other interests; he earned distinction as one of the world's most successful technology entrepreneurs, as well as a philanthropist and advocate for education.

"Then," he says, "about 20 years ago I was at an antique store in Blowing Rock, North Carolina, and saw a couple of interesting minerals that caught my eye. I thought they would look nice at home. That's when I started collecting."

And so began a significant mineral collection that sparkles and shines in the corridor leading to Jim's office at SAS headquarters in Cary, North Carolina.

With hundreds of specimens from countries around the world, the collection throws off every color of the spectrum and reveals the intricacy of some of the natural world's most amazing structures and patterns. Viewing these treasures from nature, Jim describes their sculptural shapes and saturated colors as being the "first art; art that can't be replicated by man."

This emphasis on beauty is consistent with the sensibility of a man who, with his wife Ann, is a noted patron and collector of the visual arts. He credits her with the idea, as his collection grew, of incorporating museum-style shelving in his office suite to house his treasures.

We hope this printed version of the collection's highlights gives you a sense of the beauty and wonder that captivates Jim and so many others here.

Hematite on Quartz

Hematite is colored black to steel or silver-gray, brown to reddish brown, or red. It is harder than pure iron but much more brittle.

GUANGXI PROVINCE, CHINA

6.5"h *x 4.5*"w *x 4.25*"d | *16.51cm* h *x 11.43cm* w *x 10.795cm* d

Malachite

Malachite was used as a mineral pigment in green paints from antiquity until about 1800. The green color comes from copper.

KATANGA PROVINCE, CONGO

8"h x 7"w x 6.5"d | 20.32cm h x 17.78cm w x 16.51cm d

Dioptase

Dioptase is highly desired for its intense, deep emerald green color and distinct rhombohedral crystals.

MINDOULI, REPUBLIC OF CONGO

3.75"h *x 4.5*"w *x 4.75*"d | *9.525cm* h *x 11.43cm* w *x 12.065cm* d

Calcite on Sphalerite

This yellow calcite specimen is on sphalerite, named from the Greek “sphaleros” (“deceiving”) because it’s so difficult to identify.

SMITH COUNTY, TENNESSEE, USA

5.75"h *x 4*"w *x 3.5*"d | *14.605cm* h *x 10.16cm* w *x 8.89cm* d

Jasper

Jasper is known to have been a favorite gem in the ancient world; its name means “spotted or speckled stone.”

MADAGASCAR

15"h *x 9*"w *x 5*"d | *38.1cm* h *x 22.86cm* w *x 12.7cm* d

Selenite

Selenite got its name because the ancients had a belief that certain transparent crystals waxed and waned with the moon.

MOUNT GUNSON, SOUTH AUSTRALIA, AUSTRALIA

5"h *x 12*"w *x 8*"d | *12.7cm* h *x 30.48cm* w *x 20.32cm* d

NAMIBIA
AFRICA
(CA. 1836)

5"h *x 7*"w *x 5*"d
12.7cm h *x 17.78cm* w *x 12.7cm* d

GIBEON METEORITE

There are few things that capture our Earth-bound imaginations like the mystery of space.

Maybe that is why for all the many natural wonders in the collection, one of the most popular pieces for visitors is also one that looks the most ordinary.

That is because it is a meteorite, which means it has been places most of us could never hope to go.

What it lacks in visual intrigue it more than makes up for in history, having traveled through space before journeying through Earth's atmosphere on its way to Namibia, Africa, where it was unearthed in 1836.

Next to many other colorful and shimmering specimens, it is fairly nondescript – a lustrous, irregular dark gray hunk of rock. And while it's hard work keeping it looking even that good – the meteorite's caretakers are constantly trying a variety of oils to prevent rust from appearing on its surface – looks are far less important than feel.

When you take the meteorite in your hands – something Jim often urges visitors to do – you're amazed at its heft, the dense iron-nickel chunk a seemingly impossible weight for its size.

While there are plenty of other amazing pieces in the collection to feast your eyes on, that is why this one is special: Because you just held something in your hands that was once in space.

Ruby

A ruby is the red variety of corundum, which is a type of aluminum oxide.

MYSORE, INDIA

4.5"h *x 2.5*"w *x 3*"d | *11.43cm* h *x 6.35cm* w *x 7.62cm* d

Emerald

This specimen, discovered in Alexander County, North Carolina, is 1,225 carats. At that time it was deemed to be one of only 10 emeralds larger than 1,000 carats found in North America.

ALEXANDER COUNTY, NORTH CAROLINA, USA

4.5"h *x 1.5*"w *x 1.5*"d | *11.43cm* h *x 3.81cm* w *x 3.81cm* d

Celestite

Celestite gets its name – meaning sky or heaven – from its pale blue color, though it can be found in a variety of shades.

SAKOANY, MADAGASCAR

5"h *x 6*"w *x 6*"d | *12.7cm* h *x 15.24cm* w *x 15.24cm* d

Pyrite

Pyrite's metallic luster and pale brass-yellow hue give it a superficial resemblance to gold, hence the well-known nickname of "fool's gold."

NAVAJUN, SPAIN

13.5"h *x 7.5*"w *x 4*"d | *34.29cm* h *x 19.05cm* w *x 10.16cm* d

Emerald Cluster

Emeralds gets their green coloring from trace amounts of chromium and/or vanadium.

ZIMBABWE

6.5"h *x 7.5*"w *x 4*"d | *16.51cm* h *x 19.05cm* w *x 10.16cm* d

Star Muscovite Mica

The name muscovite comes from Muscovy-glass, a name given to the mineral in Elizabethan England due to its use in medieval Russia as a cheaper alternative to glass in windows.

JENIPAPO MINE, ITINGA, MINAS GERAIS, BRAZIL

3"h *x 4*"w *x 3*"d | *7.62cm* h *x 10.16cm* w *x 7.62cm* d

HIDDENITE
NORTH CAROLINA
USA

2.5"h *x 3.5*"w *x 1.5*"d
6.35cm h *x 7.62cm* w *x 3.81cm* d

EMERALD ON LIMONITE

Even with the many wonders from around the world in Jim's collection, there are a few local pieces that are among his most-prized. That is because in addition to their natural beauty, they come with a personal connection.

These emeralds from Hiddenite, North Carolina, were mined by the same man who brought them to Jim – Terry Ledford.

Ledford, who came from a mining family, had also been known to dig for muscovite mica and hiddenite. His claim to fame, though, was his 2009 discovery of a 310-carat emerald that was later cut to become the 65-carat "Carolina Emperor."

Over the years, he and Jim got to know each other, making Ledford's unlike any other mineral or gem in the collection.

They were delivered personally as opposed to picked out at a show. Whenever Ledford found a piece he thought Jim would like, he got in touch to let him know.

So it was a terrible shock in late 2014 when Ledford, just before his 58th birthday, was killed in a mining accident in the same town where he unearthed these gems. His death was very hard for those at SAS who knew him and his contribution to the collection.

That's why these emeralds are more than just another beautiful gem – they are cherished.

Amethyst

Medieval European soldiers wore amethyst amulets as protection in battle in the belief that amethysts heal people and keep them coolheaded.

SAKUR, MAHARASHTRA, INDIA

5.5"h *x 5.5*"w *x 3*"d | *13.97cm* h *x 13.97cm* w *x 7.62cm* d

Chrysocolla and Malachite

The bright, attractive color of chrysocolla comes from the copper in its chemical structure.

CONGO

9.5"h *x 11*"w *x 5*"d | *24.13cm* h *x 27.94cm* w *x 12.7cm* d

Calcite on Fluorite

It is not uncommon to find minerals layered in calcite, which often forms from calcium-rich water inside caverns.

XIANGHUAPU MINE, HUNAN PROVINCE, CHINA

12.5"h *x 9*"w *x 5*"d | *31.75cm* h *x 22.86cm* w *x 12.7cm* d

Scolecite

Most of the world's finest scolecite specimens, like this one, are found in the Tertiary Deccan Basalt near Nasik and Pune in the state of Maharashtra, India.

MAHARASHTRA, INDIA

6"h *x 9*"w *x 7.5*"d | *15.24cm* h *x 22.86cm* w *x 19.05cm* d

Amethyst

In the Old World, amethyst was considered a cardinal gem, one of the five gemstones considered precious above all others, until large deposits were found in Brazil.

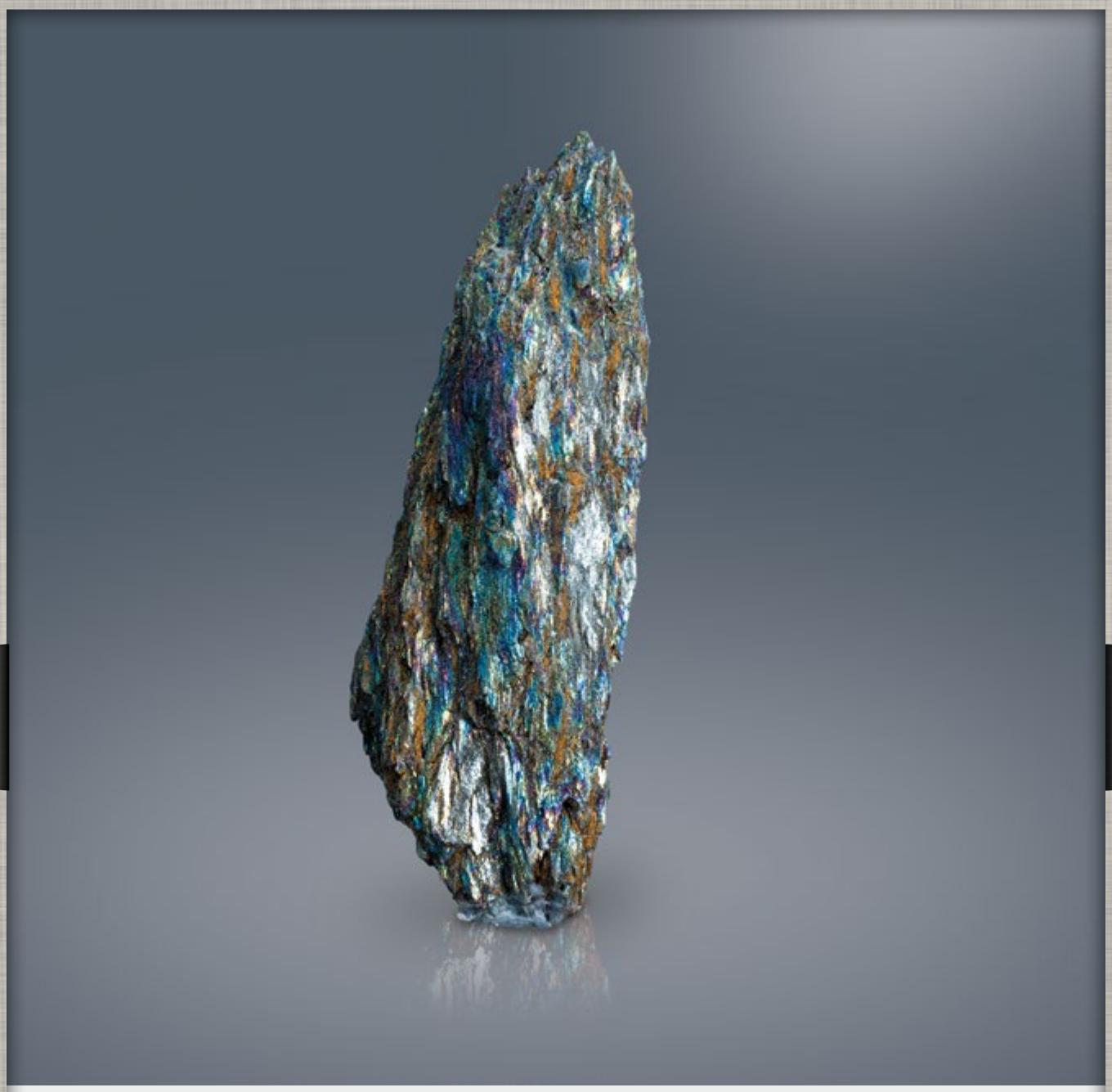
RIO DO SUL, BRAZIL
12”h *x 30*”w *x 15*”d | *30.48cm* h *x 76.2cm* w *x 38.1cm* d

Siderite and Chalcopyrite

Chalcopyrite is the most important copper ore, though it is rarely found in association with native copper.

LIUPANSHUI, GUIZHOU PROVINCE, CHINA

5.5"h *x 3.5*"w *x 2.5*"d | *13.97cm* h *x 8.89cm* w *x 6.35cm* d



Rainbow Hematite

While minerals sold under the name “rainbow hematite” are often extremely shiny thanks to man-made coating, the natural version with an iridescent luster is actually quite rare.

JOÃO MONLEVADE, MINAS GERAIS, BRAZIL

5"h *x 2*"w *x 1*"d | *12.7cm* h *x 5.08cm* w *x 2.54cm* d

Quartz

Quartz is one of the most abundant minerals on the Earth's surface and has a variety of scientific uses.

MAHARASHTRA, INDIA

11.5"h *x 13*"w *x 5.5*"d | *29.21cm* h *x 33.02cm* w *x 13.97cm* d

Calcite

In the world of crystals, green calcite like this specimen is believed to increase success and prosperity.

CHIHUAHUA, MEXICO

8"h *x 6*"w *x 3*"d | *20.32cm* h *x 15.24cm* w *x 7.62cm* d

HERKIMER DIAMOND

They say diamonds are forever. And diamonds are a girl's best friend. But what do they say when they find out a diamond isn't a diamond?

There were probably a bunch of miners in upstate New York who could have answered that question for you in the late 18th century.

That's what those unlucky diggers thought when they discovered large quantities of what they believed were diamonds embedded in exposed outcrops of dolostone in and around Herkimer County, New York.

"They thought they were going be rich," Jim says.

The only problem was that Herkimer diamonds are not actually diamonds but rather double-terminated (meaning a point at each end) quartz crystals. Thanks to their exceptional clarity and natural faceting, however, the name stuck.

Given the 500-million-year process it took to form them, and the fact that they still make for a pretty good diamond doppelganger, maybe the interesting backstory is more valuable than being "the real thing."

Fluorite With Barite and Sphalerite

Fluorite is abundant in the collection because it comes in a full spectrum of interesting colors.

TAOLIN, HUNAN PROVINCE, CHINA

8"h *x 12*"w *x 8*"d | *20.32cm* h *x 30.48cm* w *x 20.32cm* d

Smoky Quartz

The smoky color results from free silicon, formed from silicon dioxide by natural irradiation. Sunglasses, in the form of flat panes of smoky quartz, were used in China in the 12th century.

BRAZIL

6.75"h *x 3.5*"w *x 2.5*"d | *17.145cm* h *x 8.89cm* w *x 6.35cm* d

Malachite and Chrysocolla

Malachite has been carved into ornaments and worn as jewelry for thousands of years, and in some ancient civilizations it was thought to be a protection from evil.

KAMBOUR MINE, CONGO

5.25"h *x 5.5*"w *x 5*"d | *13.335cm* h *x 13.97cm* w *x 12.7cm* d

Cobaltocalcite

This mineral is popular as a collector's item because of its striking purplish pink color, which is caused by the presence of cobalt.

BOU AZZER, MOROCCO

2"h *x 3*"w *x 2.75*"d | *5.08cm* h *x 7.62cm* w *x 6.985cm* d

Apophyllite

The name apophyllite is derived from the Greek apophylliso, meaning “it flakes off,” a reference to its tendency to flake apart when heated, due to water loss.

MAHARASHTRA, INDIA

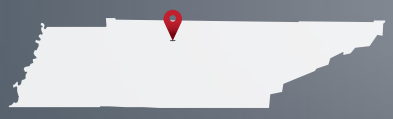
4"h *x 5*"w *x 2.75*"d | *10.16cm* h *x 12.7cm* w *x 6.985cm* d

Orpiment

For centuries, orpiment was ground down and used as a pigment in painting and for sealing wax, and was even used in ancient China as a correction fluid.

HUNAN PROVINCE, CHINA

2.5"h *x* 5.5"w *x* 3"d | *6.35cm* h *x 13.97cm* w *x 7.62cm* d



ELMWOOD MINE, CARTHAGE,
SMITH COUNTY, TENNESSEE
USA

8"h *x 12*"w *x 8*"d
20.32cm h *x 30.48cm* w *x 20.32cm* d

FLUORITE WITH BARITE ON SPHALERITE

Perfection is something we all strive for, but it is very difficult to attain.

And most of us don't have thousands of years of planetary dynamics working for and against us in that effort. That is why Jim was so taken with this example of purple fluorite, which as minerals go is considered perfectly formed.

Just one chipped corner or blemished face would change this specimen from exemplary to run-of-the-mill. That is an extremely fine line between being faultless or being commonplace, considering the journey between its formation 150 million to 200 million years ago and its more recent excavation and transport.

Made flawless by natural processes and then passed through who-knows-how-many hands before finding a home in Jim's office, it is an example of perseverance and perfection unlike anything else in the collection.

The moment it came into his possession, Jim knew he would need to find a special place for it. So he told the person responsible for overseeing the collection, "I want you to build a case for it, because this one is perfect."

The collection at SAS has no shortage of fluorite. There are specimens in several colors, including quite a few good-looking examples of purple fluorite. But Jim understandably felt an obligation to keep this one safe after all it had been through to find its way to him still in pristine condition.

Malachite Stalactites

Malachite stalactites form in large empty cavities created when malachite is dissolved by groundwater.

CONGO

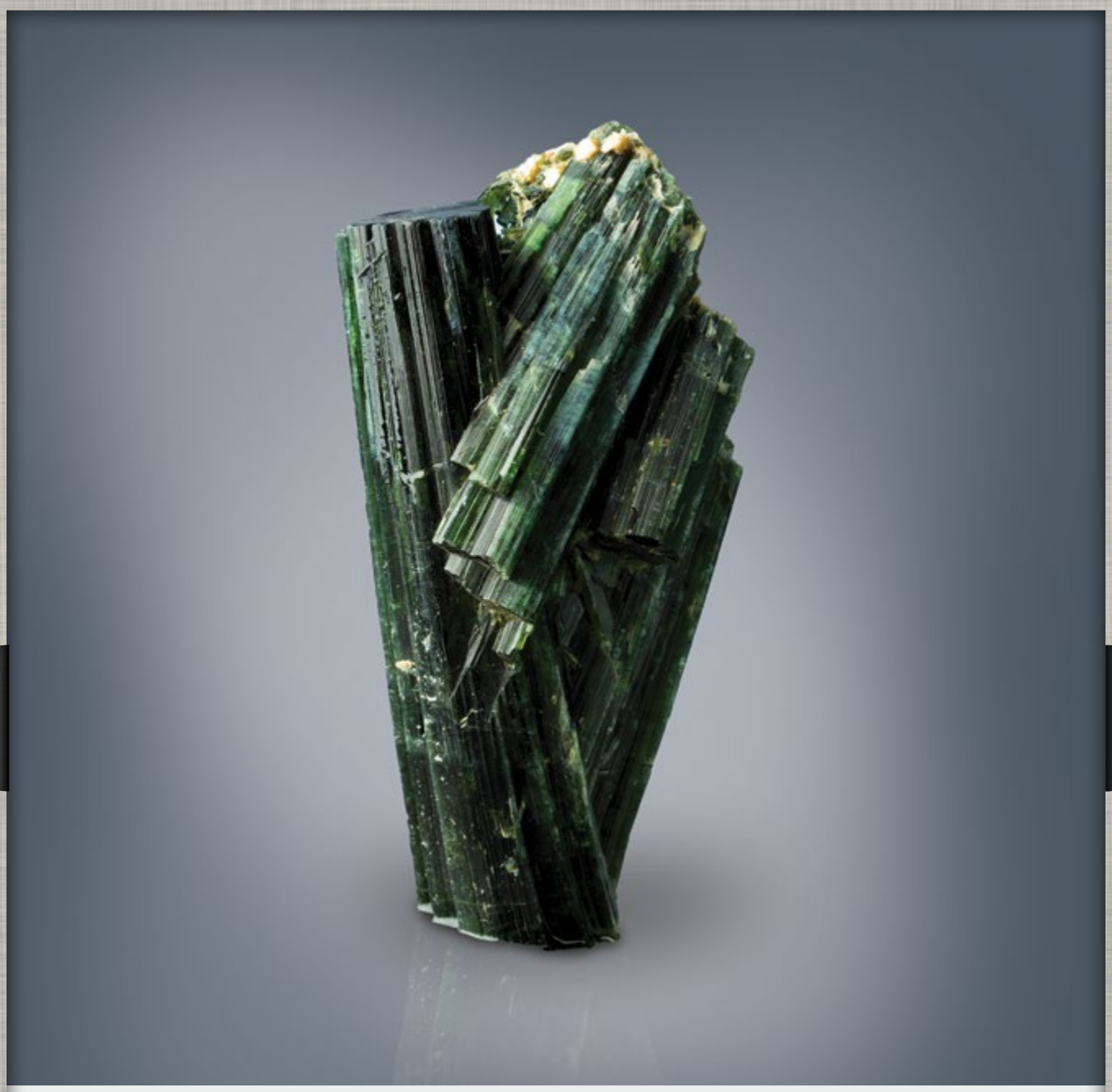
5.25"h *x 4.5*"w *x 3.5*"d | *13.335cm* h *x 11.43cm* w *x 8.89cm* d

Aquamarine and Muscovite

Because of its clear blue color, it's no wonder aquamarine's name comes from the Latin phrase "water of the sea."

BALTISTAN, PAKISTAN

3.5"h *x 4.5*"w *x 3.5*"d | *8.89cm* h *x 10.16cm* w *x 8.89cm* d



Tourmaline

Green tourmaline has a unique property: It appears darker in color when viewed through its vertical axis than its horizontal one.

MINAS GERAIS, BRAZIL

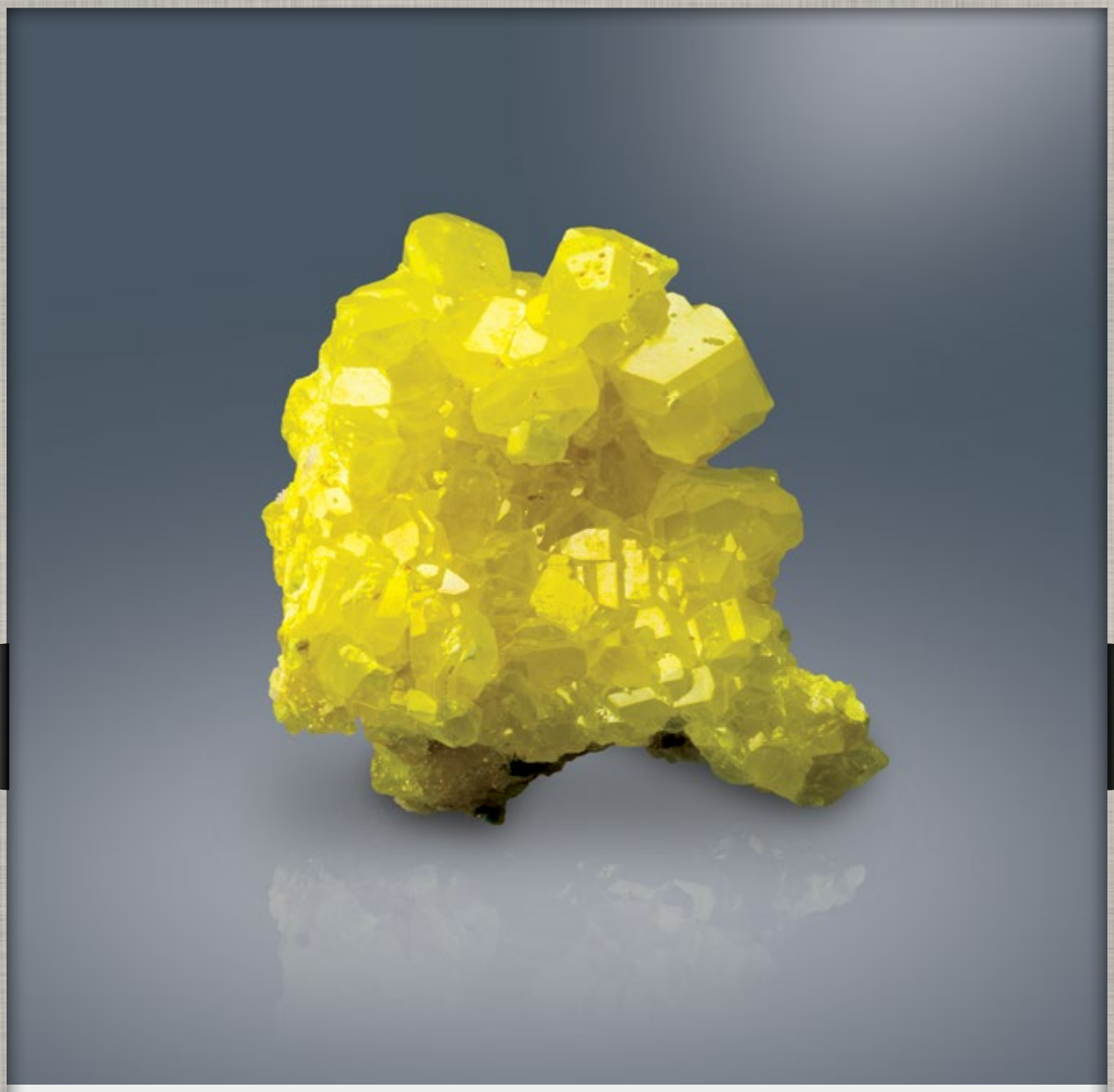
5"h *x 2.25*"w *x 1.75*"d | *12.7cm* h *x 5.715cm* w *x 4.445cm* d

Gypsum

Gypsum is a natural insulator, feeling warm to the touch when compared to a more ordinary rock or quartz crystal.

RED RIVER FLOODWAY, WINNIPEG, MANITOBA, CANADA

3.75"h *x 4.25*"w *x 2.5*"d | *7.62cm* h *x 10.795cm* w *x 6.35cm* d



Sulphur on Aragonite

While it's tempting to touch this bright yellow piece, sulphur is actually quite brittle – even holding a cool specimen in a warm hand can break it.

AGRIGENTO, SICILY, ITALY

1.75"h *x* 2"w *x 1.25*"d | *4.445cm* h *x 5.08cm* w *x 3.175cm* d

Copper

Copper occurs naturally as native metallic copper, which has been mined for centuries.

JEZKAZGAN, KAZAKHSTAN

3.5"h *x 1.75*"w *x .25*"d | *8.89cm* h *x 4.445cm* w *x 0.635cm* d

SICILY
ITALY

7.5"h *x 7*"w *x 6.5*"d
19.05cm h *x 17.78cm* w *x 16.51cm* d

SICILIAN SULPHUR

Hear the word “sulphur” and the image that comes to mind is that of a pale yellow hunk of rock. Not very exciting.

But for Jim, there was a type of sulphur he had been seeking out for 10 years before he finally found it, knowing it is much more attractive than that image we just conjured – sulphur in crystal form.

In the 1800s, sulphur was the main resource in the central part of Sicily. At that time Sicily had a monopoly on sulphur, 95 percent of the world’s production, and almost all of it was exported.

The European, American and Japanese chemical industries depended exclusively on Sicilian sulphur.

So naturally, Sicily was the source of this impressive piece from the collection, which boasts a cluster of bright yellow crystals.

Urban legend has it that if you were to touch the crystals, they would explode. But don’t worry – it really is just a myth.

For sulphur to explode it has to be in powdered form, making this piece perfectly safe to sit on display at SAS.

Scolecite on Stilbite

Scolecite is somewhat rare but obviously popular with collectors for its delicate radiating crystals, which are formed in volcanic bubbles.

MAHARASHTRA, INDIA

7"h *x 6.5*"w *x 5*"d | *17.78cm* h *x 16.51cm* w *x 12.7cm* d

“Poker Chip” Calcite

No need to bluff on this explanation: It’s clear this type of calcite got its name for its stackable look.

GUANGXI PROVINCE, CHINA

4.25"h *x 3.5*"w *x 4*"d | *10.795cm* h *x 8.89cm* w *x 10.16cm* d

Stilbite

Stilbite commonly forms crystals inside the petrified bubbles (called vesicles) of volcanic rocks that have undergone a small amount of metamorphism.

NASHIK DISTRICT, MAHARASHTRA, INDIA

12"h *x 20*"w *x 6.5*"d | *30.48cm* h *x 50.8cm* w *x 16.51cm* d

Blue Barite

While these crystals may look delicate, the name “barite” comes from the Greek word for “heavy.”

SIDI LAHCEN MINE, NADOUR, MOROCCO

7"h *x 8*"w *x 5*"d | *17.78cm* h *x 20.32cm* w *x 12.7cm* d

Amethyst

The color purple is traditionally the color of royalty, so amethyst has been used throughout history to adorn rich and powerful monarchs and rulers.

RIO GRANDE DO SUL, BRAZIL

6"h *x 8*"w *x 11*"d | *15.24cm* h *x 20.32cm* w *x 27.94cm* d

Quartz With Pyrite

This piece combines the luster of “fool’s gold” with the intricate white crystals of quartz.

HUARON DISTRICT, PERU

9"h *x 11*"w *x 5*"d | *22.86cm* h *x 27.94cm* w *x 12.7cm* d

RIO DO SUL
BRAZIL

8"h *x 13*"w *x 5*"d
20.32cm h *x 33.02cm* w *x 12.7cm* d

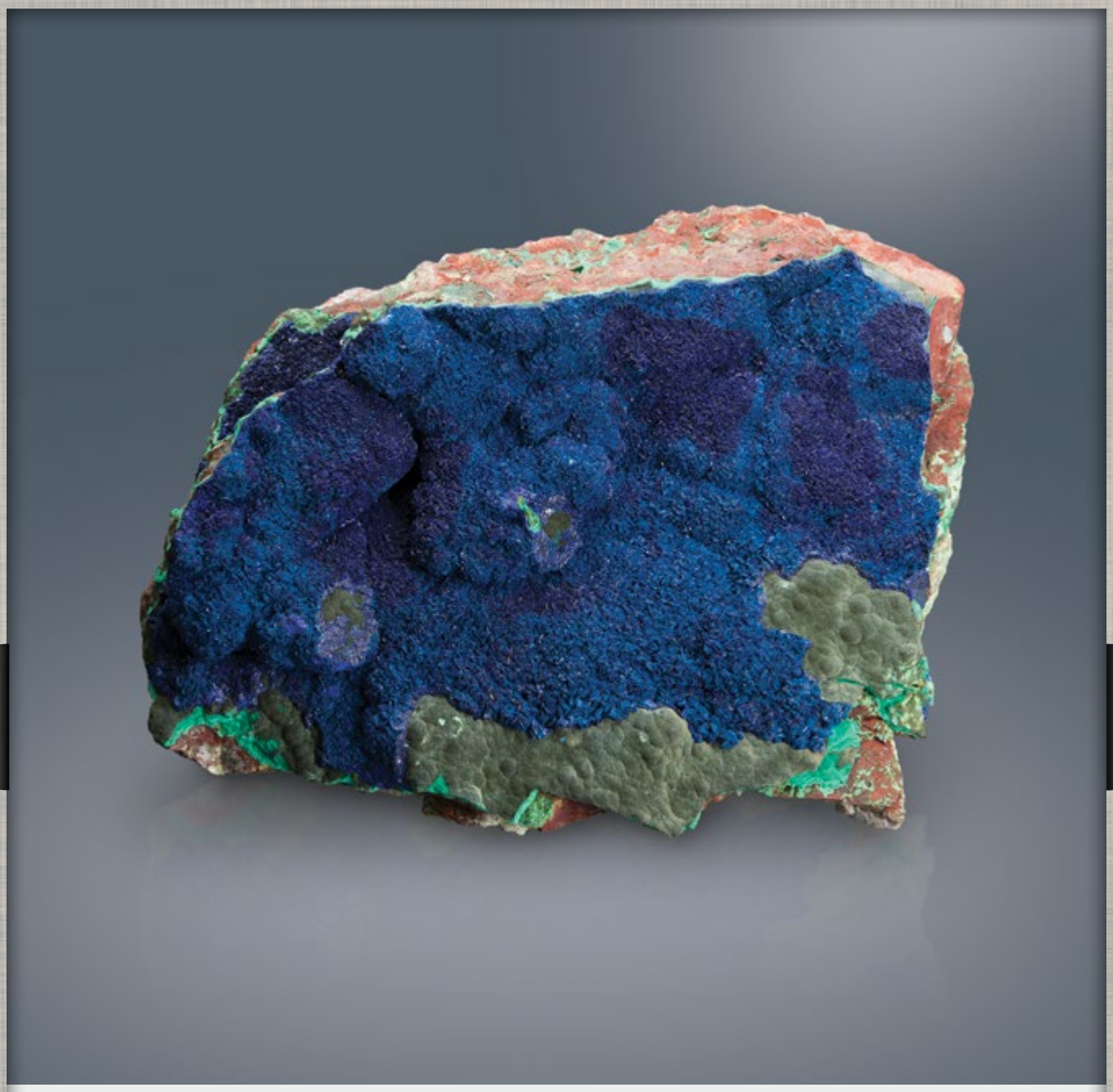
CITRINE

A little superstition never hurt anyone. Even if it is mostly in jest.

Around the globe, SAS' success comes from having the world's leading advanced analytics, not from a crystal that Jim happens to be particularly fond of. But that doesn't stop him from jokingly giving citrine credit for his company's accomplishments.

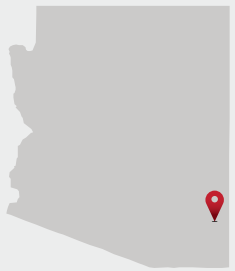
Known in the world of crystals as "the success stone" or "the merchant stone," citrine is supposed to provide professional support in the form of manifesting and maintaining prosperity. "My goal is to keep it near me so I can be a better merchant," Jim says with a laugh.

Maybe citrine isn't really responsible for SAS' success. But that doesn't mean it can't make for a fun company legend.



Azurite

The stunning blue color – which gives this mineral its name – is due to the chemical interaction of copper with combinations of carbon, oxygen and hydrogen.



MORENCI, ARIZONA, USA

6"h *x 11*"w *x 8*"d | *15.24cm* h *x 27.94cm* w *x 20.32cm* d

Selenite Rose

Also known as desert rose, this mineral gets its floral look when the crystals form in dry, sandy conditions.

CHIHUAHUA, MEXICO

7.5"h *x 18*"w *x 8*"d | *19.05cm* h *x 45.72cm* w *x 20.32cm* d

Aquamarine and Schorl Tourmaline on Feldspar

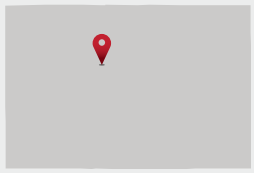
Iron-rich schorl is the most abundant type of tourmaline, not to mention a great backdrop for other colorful minerals.

ERONGO MOUNTAINS, NAMIBIA

8"h *x 8*"w *x 6*"d | *20.32cm* h *x 20.32cm* w *x 15.24cm* d

Rhodochrosite and Quartz

While its name is derived from its rose-colored crystals, this highly sought-after mineral is also sometimes referred to as raspberry spar.



SWEET HOME MINE, ALAMA, COLORADO, USA

2.5"h *x 1.75*"w *x 1*"d | *6.35cm* h *x 4.445cm* w *x 2.54cm* d

Golden Rutile and Hematite

Rutile is most known in the gem world for creating shimmering visual effects as a microscopic component in other minerals. But it's also fairly stunning on its own.

NOVO HORIZONTE, BAHIA, BRAZIL

1.25"h *x 2*"w *x .25*"d | *3.175cm* h *x 5.08cm* w *x 0.635cm* d

Cavansite

This eye-catching, rare mineral is found in very few places in the world and was only discovered in the past 30 years.

MAHARASHTRA, INDIA

3"h *x 2*"w *x 1.5*"d | *7.62cm* h *x 5.08cm* w *x 3.81cm* d

KALGOORLIE
WEST AUSTRALIA

2.25"h *x 1.75*"w *x .75*"d
5.715cm h *x 4.445cm* w *x 1.905cm* d

GOLD

When you think of the American gold rush of the mid-19th century, the images conjured are of hardscrabble prospectors, panning in the rivers of the West, hoping to find gold and strike it rich.

And plenty of them did, pulling dust, pebbles and nuggets from the rushing waters. But of course, the way those prospectors found the gold was not how it originally formed.

Gold scooped out of a river has been smoothed over by the friction of other objects and running water, so you don't get the true natural appearance of it.

"I prefer ones that are more natural," Jim says. So he held out for a piece of gold with very little smoothing, more closely resembling the shape of its original formation in the rock. When he located one, it immediately became a striking highlight of the mineral collection.

In case you're wondering, did he have any other requirements other than a piece that retained its natural shape? Well, there was one more thing. "I wanted a big chunk," he says with a laugh.

Pyromorphite

This mineral is most noted for its unique crystal formation, in which barrel-shaped crystals stack on one another and branch out, giving it an almost plant-like appearance.

GUANGXI PROVINCE, CHINA

3"h *x 2.25*"w *x 2*"d | *7.62cm* h *x 5.715cm* w *x 5.08cm* d

Crocoite

Interesting specimens that show off crocoite's unique color, high luster and unusual character are prized by mineral collectors.

DUNDAS, TASMANIA, AUSTRALIA

3"h *x 4*"w *x 3.5*"d | *7.62cm* h *x 10.16cm* w *x 8.89cm* d

Fluorite

This green specimen is yet another indicator of why fluorite is often called “the most colorful mineral in the world.”

HUNAN PROVINCE, CHINA

9"h *x 8*"w *x 5*"d | *22.86cm* h *x 20.32cm* w *x 12.7cm* d

Quartz Variety Amethyst

Because different localities produce amethyst unique to their regions (or even to a particular mine), experts can often identify the source mine that a particular amethyst came from.

REEL MINE, IRON STATION, LINCOLN COUNTY, NORTH CAROLINA, USA

11"h *x 8*"w *x 6*"d | *27.94cm* h *x 20.32cm* w *x 15.24cm* d

Lapis Lazuli

Exported to Europe beginning in the middle ages, pigment made from powdered lapis lazuli was used by some of the most important artists of the Renaissance and Baroque.

PAKISTAN

10"h *x 7*"w *x 5*"d | *25.4cm* h *x 17.78cm* w *x 12.7cm* d

Selenite on Quartz

This is a prime example of the gypsum variety known by the name selenite because of its transparency and moon-like glow.

RIO GRANDE DO SUL, BRAZIL

22"h *x 17*"w *x 13*"d | *55.88cm* h *x 43.18cm* w *x 33.02cm* d

SPRUCE PINE
NORTH CAROLINA
USA

19.5"h *x 18*"w *x .125*"d
49.53cm h *x 45.72cm* w *x 0.3175cm* d

MICA & RED GARNET

Sheets of mica are nothing if not versatile. From prehistoric times up to today, they've been used for everything from simple windows and ancient accessories to modern electronics and atomic-force microscope components.

But for all the impressive things a sheet of mica might be – or might have been – you know what Jim's favorite thing about this sample from his collection is? "It's from North Carolina."

Despite all the far-flung places represented in the collection – there are pieces from six of the seven continents (sorry, Antarctica!) – home is where the heart is. And this shimmering specimen from Spruce Pine, North Carolina, fits the bill nicely.

In fact, this versatile mineral, whose history dates back to use in prehistoric cave paintings, is still mined in the Blue Ridge Mountains of North Carolina.

Of course, nowadays the sheets are refined for more practical purposes and consistent appearance, making this good-looking sample from the collection one of a kind.

Apophyllite and Stilbite

While not well-known by the general public, apophyllite is quite popular among collectors, and is often found as a “secondary mineral” like it is here with stilbite.

NASHIK DISTRICT, MAHARASHTRA, INDIA

11"h *x 12*"w *x 6*"d | *27.94cm* h *x 30.48cm* w *x 15.24cm* d

Quartz With Tourmalinated Inclusions

Because of its unique look of stark black lines inside of the clear crystal, tourmalated quartz is often used in jewelry.

BAHIA, BRAZIL

3.75"h *x 2.75*"w *x 2*"d | *9.525cm* h *x 6.985cm* w *x 5.08cm* d

ACKNOWLEDGMENTS

Portrait, page 6, by
Jimmy Williams, courtesy of WALTER

Emerald photographed, page 17, by
Jeff Scovil, Scovil Photography

Mineral photography by
Steve Muir and Cassondra Wilson

Art direction and design by
Brian Lloyd

Written by
Evan Markfield

Edited by
Chris Hoerter
Trey Whittenton

Special thanks to:

Collections Manager
Roxanne Hicklin

Conservator
Paul Gerstenfeld

Mineral Consultant
Jeff Schlottman

return to cover