PALOMAR GEM & MINERAL CLUB

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MAY (Coronavirus) NL CONTENTS:

HAPPY BIRTHDAY to MAY birthday people!!

NEXT MEETING: ?!?!

WORKSHOP: CLOSED UNTIL FURTHER NOTICE.

The S.D. COUNTY FAIR

Has been cancelled!

Great news: PGMC Gem Show has been postponed until

June 12-13, 2021!!!

From all of us to all of you:

Please stay safe, wear a mask and if you wear gloves, realize they can spread contamination too. When you take them off, wash your hands, dispose of them properly.

This is a hard time for everyone; don't hoard, be kind & considerate.

We can get through this!!!

RIDING IN A CLOWN CAR TO MONTANA

By: Gene Ciancanelli

The Blackfoot Indian Nation gas-reserve valuation was the last consulting assignment I perform for Kilowatt Gas and Electric Company (KG&E) *(I am using pseudonyms for this story)*. For two decades, our company Cascadia Exploration performed many consulting assignments for KG&E. The Blackfoot Project is my name for this last adventure. I don't believe KG&E ever got to the project naming stage with this fiasco. The Blackfoot Project's story follows KG&E's general pattern of business performance and corporate culture, as I observed it over two decades. Like all utility companies, the firm stays in business because they have a monopoly and not because they run a well-managed business. I consulted for many of the major utility companies in North America and most jobs were ill-conceived projects that culminated in a fiasco and waste of the ratepayer's (that's you) money.

In August 1996, I receive a conference call from KG&E's Winslow Butler and Dale Krawitz, two men, whom I've never met. KG&E wants my assistance to evaluate a natural-gas field in Washington State. KG&E is planning to purchase gas reserves on the Colville Tribal Lands in central Washington. To my knowledge there are no natural-gas fields in Washington State. A telephone call, to the Washington Department of Natural Resources, reveals that they're also unaware of any gas fields in their state. Already this looks like another typical utility company debacle.

Six days later, I'm in Spokane meeting with representatives of KG&E and Columbia Energy Management, plus Colville Tribal Representative Abraham Wilkens, Dick Eagleson of the Sioux Nation, Chauncy Davis and John Laird attorneys, and Art and Pat Swensen of Swensen International Engineering. Columbia Energy Management is a holding company in the process of acquiring KG&E as a subsidiary. Abraham Wilkens is a Colville Indian Nation chief. Dick Eagleson is the Sioux Nation's War Chief and he's a retired Navy Seal with great stature as a warrior among American Indian Nations. His role is to advise Indian Nations on various business matters including this proposed enterprise. Swensen International Engineering brought this proposed natural-gas venture to KG&E. The Swensen boys say they are KG&E's partner, but I'm not sure KG&E agreed.

The first evening in Spokane, we gather for drinks and dinner. There I meet the KG&E and Columbia personnel, who are Terry Winslow, Louis Butler, Talbert Houseman, and a vice president Earl Gibbons. Although these men all work for KG&E, they apparently didn't know each other prior to this trip. Except for the father and son Swensen boys, this is a gathering of total strangers. The next morning, KG&E asks the hotel for a meeting room, only to be told the hotel has no meeting rooms. The hotel's concierge says that sometimes the hotel arranges for guests to use the conference room at a local business. The concierge leaves to make a telephone call and returns, with an extended hand, to say the conference room is available. Tip in hand, he takes us outside and points to a three-story-brick building sitting fat off on a distant hilltop. The conference room is located in that building. Spokane is a major railroad hub location and a vast multi-track railroad-switching yard is next to the hotel. The building with the conference room is across the switching yard. The concierge suggests calling taxicabs, but bigshot V.P. Mr. Gibbons says we will walk to save money. A barbwire fence surrounds the railroad yard. Eleven men, in business suits and carrying briefcases, climb through the barbwire fence and walk across numerous railroad tracks, as we cautiously maneuver among and dodge railroad cars being assembled into trains destined to travel north, south, east, and west. Finally, half an hour later, eleven dirty men are across the railroad-switching yard at a six and a half man-hour cost, which is more than 10 times the cost of the aborted taxi cab ride. If you've ever worked for any large corporation then you know vice presidents are experts at such cost saving decisions. Our now sufficiently dirty group carefully climbs through another barbwire fence to scramble up a steep brush-covered hillside. If I knew I was going on a field trip then I would have worn my field clothes. At last we reach the hilltop, where a short walk, on a sidewalk no less, takes us to the brick building. I still know nothing about this project except I am sure we are embarked upon a typical utility company junket that will lead to failure.

A sign on the building indicates this company is in the graphics and advertising business. No one is at the receptionist's desk and one man sets off to find someone. Ten minutes later he returns and says, *"I've been in*

every room in this building and there's no one here. The entire building is deserted. The good news is I found the conference room." Off we go to start the meeting, which lasts all morning. No one ever enters the building and we leave three hours later, with the empty building mystery still unanswered. In the meeting, it soon becomes evident the KG&E and Columbia people don't know why we're in Spokane. That does not surprise me. They have learned there is no gas on the Colville Tribal Lands. Swensen International is proposing to produce gas on the Blackfoot Reservation in Montana and move that gas westward using an idle pipeline across southern Canada. Then KG&E will construct a new pipeline, southward through central Washington and across Colville Tribal Lands, to eventually tie into existing underused gas pipelines heading south into California. V.P. Mr. Gibbons says after lunch we will drive over to the Blackfoot reservation to see the gas field. The men think this is a fine idea, because it is a good career move to always agree with the Executive V.P. Then I spoil everything by pointing out that we're in Washington and the Blackfeet are in Montana. (V.P. Gibbons) *"No problem, we'll just drive across the state line."* Again, I have to burst his bubble. (Gene) *"We're in Spokane in eastern Washington. It will be necessary to travel about 25 miles to the state line and then drive across Idaho and some distance into Montana. This is across mountainous country and there is no direct interstate highway. We'll be traveling by secondary highways and it will be an all-day trip."* Now, V.P. Mr. Gibbons is clearly irritated with my audacity to question his pronouncement, which no utility company employee would dare to do. V. P. Gibbons decides we should go back to the hotel where HE will sort things out. Once again eleven men in suits risk life and limb to walk across the busy railroad-switching yard, but now we're all seasoned railroad hands or at least railroad hobos, judging by our dirty suits and shoes. One man now has a torn suit from the barbwire. KG&E saved taxicab fare at the expense of one new suit, eleven dry cleaning bills and shoe shines, plus a thirteen-man-hour expense walking through the rail yard. I now understand completely how Mr. Gibbons became an Executive Vice President of a major utility company.

Back at the hotel, a tip to the helpful concierge produces some road maps and surprise! The geologist is right. There is a state called Idaho between Washington and Montana. My 4th grade teacher, Ms. Reynolds, would be proud of me. Having been proven wrong, V.P. Gibbons is angry with this lowly geologist, who made him look foolish. I'm told he doesn't want any more input from me! I now have a conundrum, because KG&E is paying me to give him advice. Apparently, V. P. Gibbons prefers to wander blindly secure in his ignorance and ineptitude. (Gibbons***)*** *"I'm too busy to spend all day driving to Montana. You fellows go and fill me in back in the office."* The attorneys aren't needed and that reduces the entourage to eight clueless men. The Swensen boys drove to Spokane in a large and very luxurious crew van that will be tomorrow's transportation. The Swensen boys are promoters, but unlike the typical Cadillac or Lincoln driving promoter, they had this luxury custom built crew van for which I soon became thankful. In my mind, I now dubbed my companions "the Feckless Group".

Early the next morning the Feckless Group, without guidance from Lewis and Clark or Sacagawea, sets off to the east with no preconceived route in mind. From years of experience, I know that wandering aimlessly is what big corporations like to do. I wisely keep my mouth shut, after all I'm being paid by the hour. Best to enjoy an easy day relaxing in the lone comfortable empty seat in the van's rear. This day will prove that Indians are no better navigators than clueless white men*.

**In our nit-picking politically correct world, where people take offense over every real, imagined or perceived concern, let me make this clear. First, I don't subscribe to the nonsense of political correctness. Reading this you may think I'm prejudiced toward Native Americans. We Native Americans are people the same as everyone else with the same good, bad, and silliness as the rest of you. To my way of thinking, pigeonholing people into a group for any purpose or special treatment, either good or bad, is a form of discrimination and prejudice, which I choose to take no part in. My mother's family was Native America, actually to be precise I'm a Micmac, which is a Canadian tribe from Nova Scotia that drove off the Vikings. Until 2007, the Canadian government still had a law offering 50 English pounds for my scalp. That's why my mother's family fled Canada and ended up in America with all their hair and now useless hockey sticks. We taught the Canadians to play hockey and to beat each other up instead of us.*

An hour into the trip, the Feckless Group pass a small power plant sitting in the middle of nowhere. An engineer says, *"That's the new automated experimental (something or another) power plant."* Another engineer says, *"Let's stop*

and take a look." We drive into the plant and go inside. The plant is empty. There's no one present, not even a watchman. I'm thinking, *"Everywhere I go with this bunch, we trespass into deserted buildings. I'm getting out before the cops arrive."* I walk out to the highway while the engineers enjoy themselves looking over the power plant machinery. If the police show up, I'm not with this bunch. An hour later, the Feckless Group pick me up sitting at the roadside. All that long day we wander back country roads, going ever eastward without food or water, because we managed to avoid every town on the route.

Finally, we arrive on the Blackfoot reservation late in the afternoon. War Chief Dick says the Blackfeet have a tribal hotel, but it's only open to Indians (Indians discriminate too). Dick's going to stay at the Blackfoot hotel and attend some tribal ceremony that evening. Driving onto the reservation, we enter a planned suburban community containing new middle-class houses with sidewalks and paved streets. A few years earlier, this was a modern planned community built at government expense. Today, the landscaped yards have reverted to weeds and brush growing around abandoned cars, pickup trucks, junk appliances, and various discarded household rubbish. No house has seen any maintenance since the government turned the homes over to the Blackfeet. I image each weekend the homeowners face the same dilemma, *"Do I buy a gallon of paint or a gallon of beer? Which will it be paint or beer, paint or beer? Oh Hell yes, let's buy beer!"* At the Tribal Hotel War Chief Dick says, *"Come inside you will find this interesting."* This is a nice-looking hotel but this is not a typical hotel lobby. There is a large totally empty lobby with a girl standing inside a metal cage where guests register through a grill, as if they are entering a prison. (Dick) *"On weekends people return to the reservation and things get rowdy around here. This wire cage is to protect the reservation clerk from flying beer bottles and fists. The alcoholism rate runs about 80 percent. I will meet you at 9 AM at the Blackfoot Tribal Administration building."* That last sentence will prove to be the only preplanning, or planning of any sort, in this entire project. Dick is obviously too smart to be a vice president. The remaining Feckless Group drives on to Cut Bank, Montana, where we're lucky to get the last rooms in town. Motorcycle gangs have gathered from all over the country for a week of fighting and drinking. We're the hotel's only guests without leather clothing with biker gang logo's, tattoos, and a police record. An hour later, the hotel parking lot is filled with police cars and bikers. A biker gang member got angry at his girlfriend and stabbed her to death. A Sheriff stands on a police cruiser's roof with a bullhorn. (Sheriff) *"We're not going to tolerate any trouble from you @#&%$*@%& guys. All incidents will be handled using maximum force. This is not candy-ass San Francisco or s%&$hole Chicago. If you m#%@%&@ f&$@'s think I'm going to arrest you and put you in the county jail then you're F#$&ing mistaken. This county is not going to waste money feeding you or giving you a trial. My officers have only one order. That's to shot to kill and we mean business."* I will bet money Cut Bank, Montana is not a sanctuary city. Later we go to the hotel's vast dining room, where the tables are filled with bikers eating in a subdued mood. I don't know if this silent rage is caused by the girl's death or the half-dozen shotgun-toting policemen, standing around the dining room's perimeter like guards in a prison cafeteria. The dining room's prison ambiance should be familiar to the ex-convict biker crowd. By now you probably think things can't get sillier, but there's plenty more to come.

The next morning, the Feckless Group spends an hour driving around Cut Bank trying to find a place to eat breakfast. Not because we're trying to avoid bikers. They're all still asleep and hung over. No, our crowd has differing ideas regarding what constitutes a proper breakfast. One guy only eats fruit for breakfast and another is a vegetarian. Aimlessly, we drive around looking over each breakfast emporium, as if Cut Bank's cowboy culture offers much choice to the vegan crowd. At last, a greasy spoon café is, by default, the breakfast stop. Inside the waitress hands us the usual greasy crud and flyspeck covered plastic menus that are part of western small-town ambiance. Cheetah, the fruit guy, orders a grapefruit and banana. The vegetarian, upset there is no proper vegetarian choice, orders toast. The rest of us have the "special" bacon, 3 eggs, and a short stack. Always order bacon, fried eggs, and pancakes in small western towns. Experienced geologists and truckers know anything else could give you food poison. Five men, filled with a proper greasy-western breakfast, and two grouchy health food guys now drive to the administrative headquarters on the Blackfoot Nation. War Chief Dick is waiting outside the building. It's a momentous occasion, because this is the only time, on this entire project, when something goes as planned. Walking inside, I naively assume our group has an appointment or at least the Blackfeet know who we

are. Surprise! The Blackfeet have never heard of KG&E or Swensen International. The only one they know is Dick, because he and all the assembled Indian chiefs got drunk together the previous night. After much discussion, it's decided the Blackfeet will meet with us and hear what KG&E is proposing, but a meeting can't be organized until the afternoon.

A gas well being drilled on the Blackfoot Reservation in Montana.

Now there's a morning to kill and the Blackfeet allow us to poke around their gas field. We drive out to the gas field, pictured above, which is located adjacent to the Canadian border in the reservation's northern deserted area. There, scattered among some old cornfields, are old shut-in gas wells. The boys now ask, *"How much gas is left in this reservoir?"* (Gene) *"I don't know. All I see are old capped gas wells. I can't see any deeper into the ground than you can. A geologist needs well data, production data, and reservoir data."* Poking around, they notice a very large abandoned building down in a gully. These guys can't pass up an empty building. I'm standing on a knoll, looking down, as they try to force open a door with rusted hinges. Suddenly, the door flies open and a large barn owl swoops out into their faces, causing the scattering Feckless Group to let out a startled howl. To their disappointment, the building is empty. If you're keeping score this is the third empty building we have trespassed into. The morning slowly passes in standard big corporation pointless wandering around. We even accidently wandered into Canada, but fortunately we Indians all escaped with our hair. With noon approaching, we return to Cut Bank for lunch. Cut Bank's streets now throb to the rumble and roar of motorcycles. All rowdy daytime bike riding is confined to the younger members. Nursing coffee and sucking cigarettes, the older-still-hung-over-battle-scared veteran bikers sit in the cafés with their aging tattooed and semi-toothless skank mamas.

The Feckless Gang returns to the reservation fortified with greasy burgers or bacon free BLT sandwiches for the vegans. The meeting begins with speeches about War Chief Dick and the honor his heroism has brought to all

Indian people. Next I'm expecting the peace pipe, but instead the tribal chairman says, *"We have a tribal geologist. Why doesn't your geologist talk to our geologist, while we talk business?"* This makes sense and a very attractive friendly cute Indian girl, dressed in a miniskirt, escorts me to another building. Ned McQuaid, the Blackfoot's geologist**,** is standing in the hallway and we're introduced. Ned says he just resigned and is packing to leave in ten minutes. He's an Indian, but from another tribe, Arapaho as I recall. Ned and I talk as he packs boxes along with interruptions from people dropping by to say goodbye. Throughout our brief conversation, Ned can't refrain from making endless curses about *"dumb stupid pigheaded etc. Blackfeet".* I know how frustrating it is to work for clients, who won't listen to the expertise they are paying for. The meeting's total useful talking time comprises about 3 minutes, as we carry boxes to his car. I learn all the reservation's gas reserves are under contract to another company. Ned suggests contacting Dwight's Energy Data in Denver, where KG&E can purchase a CD disk containing all the Blackfoot Nation's well log and production history data. Ned leaves and I return to the meeting, just as the KG&E folks learn there are no gas reserves for sale. With some reservation (pun intended), the Blackfeet indicate KG&E might be able to obtain a concession to explore the reservation's untested southern area for new gas reserves. I sense the Blackfeet consider KG&E to be an unprofessional bunch of screw-ups. In the KG&E men's defense, they were sent into this fiasco as clueless as I was.

In late afternoon, the Swensen van begins the long drive back to Spokane. I'm not looking forward to an all-night drive on winding mountain roads. As the van is driving through Kalispell, Montana, I suggest the boys drop me off. I flew out of there once and I will catch a morning flight home. Others also prefer this idea to an all-night drive and they also decide to fly home.

KG&E decides to continue exploration on the Blackfoot Reservation. I contact Dwight's Energy Data and learn they sell a CD disk containing all the oil and gas data for the entire state of Montana, including the Blackfoot Reservation. This CD disk will cost $500, which is a bargain. I telephone Terry Winslow for KG&E's authorization to begin the work. Terry 's boss, V.P. Gibbons refuses to spend $500 for a CD Disk, because (he actually said this) they sell CD disks for a dollar at the office supply store. Explaining that we're buying the data compiled on the disk and not an empty piece of plastic makes sense to Terry. Terry tries explaining this to V. P. Gibbons, but apparently Gibbons has his mind made up or perhaps he didn't like my revealing his stupidity once again. There's nothing I can do without data. For two months, there are back and forth phone calls asking about my progress on the project. Each time, I respond there can be no progress without a signed contract and authorization to spend money. Gradually, the calls become less frequent. Several months pass and I call Terry, but he knows nothing about the project. That is the last contact I ever had with KG&E. Six months later, Al Swensen calls to inquire about progress on the Blackfoot research. He says he's had no contact with KG&E for several months. Apparently, the Blackfoot Project faded away in the standard corporate method used to kill bad ideas.

Every KG&E project I worked on was a fiasco or a missed opportunity. They never seem to follow through with a project. The projects always lack planning, conviction, and purpose, which results in a corporate culture, where people accept aimless and listless projects. No one has the authority, responsibility, interest, or courage to produce results. The Blackfoot experience fittingly concluded twenty years of wasted time and missed opportunities consulting for KG&E. They did pay our invoices; I'll give them that.

FROM THE CLUB: THANK YOU GENE FOR YOUR GREAT STORIES YOU SHARE WITH US EVERY MONTH! This one is especially appreciated since we can all use a laugh!

This is actually opal with an insect preserved in it!

How can I become a fossil? (article from Michele Sheperd)

bbc.com/future/story/20180215-how-does-fossilisation-happen

Every fossil is a small miracle. As author Bill Bryson notes in his book A Short History of Nearly Everything, only an estimated one bone in a billion gets fossilised. By that calculation the entire fossil legacy of the 320-odd million people alive in the US today will equate to approximately 60 bones – or a little over a quarter of a human skeleton.

But that's just the chance of getting fossilised in the first place. Assuming this handful of bones could be buried anywhere in the US's 9.8 million sq km (3.8 million square miles), then the chances of anyone finding these bones in the future are almost non-existent.

Fossilisation is so unlikely that scientists estimate that less one-tenth of 1% of all the animal species that have ever lived have become fossils. Far fewer of them have been found.

You might also like:

• How will future archaeologists study us?
• How Western civilisation could collapse
• Who will be remembered in 1,000 years?

As humans, we have a couple of things going for us: we have hard skeletons and we're relatively large. So we're much more likely to make it than a jellyfish or a worm. There are things, however, you can do to increase your chances of success.

Taphonomy is the study of burial, decay and preservation – the entire process of what happens after an organism dies and eventually becomes a fossil. To answer the question of how to become a fossil, BBC Future spoke with some of the world's top taphonomists.

1. Get buried, and quickly

“It’s really a question of maintaining a good condition of the body after death – long enough to be buried under sediment and then altered physically and chemically deep underground to become a fossil,” says Sue Beardmore, a taphonomist and collections assistant at the Oxford University Museum of Natural History.
“To be preserved for millions of years, you must also survive the first hours, days, seasons, decades, centuries, and thousands of years,” adds Susan Kidwell, a professor at the University of Chicago. “That is, you must survive the initial transition from the ‘taphonomically active zone’… to a zone of permanent burial, where your remains are unlikely to be exhumed.”
There are almost endless ways that fossilisation can fail. Many of these happen at, or down to 20-50cm below, the soil or seafloor surface. You don’t want your remains to be eaten and scattered by scavengers, for example, or exposed to the elements for too long. And you don’t
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want them to be bored into or shifted around by burrowing animals.
View image of The sand and mud deposits of Canada’s Badlands quickly buried bones
When it comes to rapid burial, sometimes natural disasters can help – such as floods that dump huge amounts of sediment or volcanic eruptions that smother things in mud and ash.
“One theory for the occurrence of dinosaur bone beds is firstly drought conditions, that killed the dinosaurs, followed by floods that moved the sediments to bury them,” Beardmore says.
Of course, the fact that human bodies are typically buried six feet under (unless cremated) gives you another leg up here. But that isn’t enough on its own.

2. Find some water

Obviously the first step is dying, but you can’t die just anywhere. Picking the perfect environment is key. Water is one important thing to consider. If you die in a dry environment, once you’ve been picked over by scavengers, your bones will probably weather away at the surface. Instead, most experts agree you need to get swiftly smothered in sand, mud and sediments – and the best places for that are lakes, floodplains and rivers, or the bottom of the sea.
“The palaeoenvironments that we often see the best fossils come out of are lake and river systems,” says Caitlin Syme, a taphonomist at the University of Queensland in Brisbane, Australia. The important thing is the rate at which fresh sediments are burying things. She recommends rivers flowing from mountains which cause erosion and therefore carry a lot of sediment. Another option is a coastal delta or floodplain, where river sediment is rapidly dumped as the water heads out to sea.
Ideally, you also want an ‘anoxic’ environment: one very low in oxygen, where animals and microorganisms that would digest and disturb your remains can’t survive.
Kidwell recommends avoiding about 50cm below the seafloor, “the maximum burrowing depth of shrimp, crabs and worms that might irrigate the sediments with oxygenated water”, which would promote decomposition and stir up the body.
“You want to end up quickly after death in a spot that is relatively low elevation, so that it is a sink for sediment, and preferably with standing water – a pond, lake, estuary or ocean – so that anoxic conditions might develop,” she says.
View image of A 150 million year old archaeopteryx (Credit: Getty)
In rare cases, fossils created in these kind of still, anoxic conditions preserve their soft tissues like skin, feathers and internal organs. Examples include the many exquisite feathered dinosaurs from China or the Bavarian quarries that produced the fossils of the earliest bird, archaeopteryx.
Once your fossil gets below the biologically active surface layer, then it's stable and will continue to be buried more deeply as further sediments accumulate, Kidwell says. “The risk for destruction then shifts to a completely different geological timescale, namely that of tectonism.”
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The question, then, is how long before the sediments encasing the corpse are turned to more permanent stone… and are lifted by geological activity to a height where erosion can expose the remains.

3. Skip the coffin

Now we come to the thorny technicality of what a fossil actually is – and what kind of fossil you want your body to be.

Very generally, anything up to around 50,000 years old is what's known as a 'subfossil'. These are largely still made up of the original tissues of the organism. Extinct Pleistocene megafauna found in caves – such as giant ground sloths in South America, cave bears in Europe, and marsupial lions in Australia – are good examples.

However, if you want your remains to become a fossil that lasts for millions of years, then you really want minerals to seep through your bones and replace them with harder substances. This process, known as 'permineralisation', is what typically creates a fully-fledged fossil. It can take millions of years.

As a result, you might skip the coffin. Bones permineralise most rapidly when mineral-rich water can flow through them, imbuing them with things like iron and calcium. A coffin might keep the skeleton nicely together, but it would interfere with this process.

There is a way a coffin might work, though. Mike Archer, a palaeontologist at the University of New South Wales, suggests burial in a concrete coffin filled with sand and with hundreds of 5mm holes drilled into the sides. This then needs to be buried deep enough that groundwater can pass through.

"If you want to be a classic bony fossil, a bit like something from Dinosaur Provincial Park in Canada, then something like a [coarse] river sand would be pretty good," says Syme. "All the soft tissues would be destroyed and you'd be left with this beautifully articulated skeleton."

In terms of the minerals, calcium ions which can precipitate into calcite, a form of calcium carbonate, are especially good. "These can start to cement or cover the body which will protect it in the long run, because given time it will most likely be buried at a greater depth," Syme says.

Deliberately seeding your corpse with the appropriate minerals, such as calcite or gypsum, might be a way to accelerate this. Encouraging the growth of tough iron-rich minerals would also be sensible as they withstand weathering well in the long run.

View image of If you want to personalise your fossil further, add colour with some copper Silicates, from the sand, are also a nice durable mineral to have incorporated. Archer even suggests getting buried with copper strips and nickel pellets if you fancy fossilised bones and teeth with a nice blue-green colour to them.

4. Avoid the edges of tectonic plates

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If you made it through the first few hundred thousand years and minerals begin to replace your bones, congratulations! You've successfully become a fossil. As sediments build up on top and you get pushed deeper into Earth's crust, the heat and pressure will aid the process further.

But it's not a done deal yet. Your fossil might still shift to such depths that it could be melted by the Earth's heat and pressure.

Don't want that to happen? Steer clear of the edges of tectonic plates, where the crust is going to eventually get sucked under the surface. One such subduction zone is Iran, where the Eurasian Plate is rising over the Iranian Plate.

5. Get discovered

Now you need to think about the potential for rediscovery.

If you want somebody to chance upon your carefully preserved fossil one day, you need to plan for burial in a spot that currently is low enough to accumulate the necessary sediments for deep burial – but that will eventually be pushed up again. In other words, you need a place with

uplift where weathering and erosion will eventually scour off the surface layers, exposing you.
View image of The Dead Sea may be a good place to preserve your fossil
One good spot might be the Mediterranean Sea, Syme says; it's getting shallower as Africa is pushed towards Europe. Other small, inland seas that will fill with sediment are good bets, too.
"Perhaps the Dead Sea," she says. "The high salt would preserve and pickle you."

6. Or go rogue

We've covered the standard method for hard, durable fossils with bone largely replaced by rock. But there are some oddball methods to consider, too.
Top of the list is amber. There are astounding fossils perfectly preserved in this gemstone made of tree resin – such as recent finds of birds, lizards and even a feathered dinosaur tail in Myanmar. "If you can find a large enough amount of tree sap and get covered in amber, that's going to be the best way to preserve your soft tissues as well as your bones," Syme says. "But it's obviously pretty difficult for such a large animal."
Can't find enough amber? The next option is tar pits of the kind that have preserved sabretoothed cats and mammoths at La Brea in Los Angeles. Although here you would mostly likely end up disarticulated, your bones jumbled in with other animals. There's also freezing on a mountain or in a glacier, like Ötzi the iceman, found in the European Alps in 1991.
View image of Where Ötzi the iceman met his fate
Another route might be natural mummification, with your body left to dry in a cave system.
"There are a lot of cave system remains that get covered with calcium from groundwater, which also forms stalactites and stalagmites," Syme says. "People like caving and so if the cave systems still exist in the future, they might happen upon you."
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One final method to preserve your corpse almost indefinitely, though not in the form of a fossil, would be launching you into space – or leaving you on the surface of a geologically inert celestial body with no atmosphere, such as the Moon.
"The vacuum of space would be very good if you want your body to remain perpetually nondecaying," Syme says. She adds that you could attach a radio beacon if you want to get found again in the distant future.

7. Leave a little something extra

Assuming you are found millions of years hence, what else might be preserved alongside you?
Plastics (fidget spinners, anyone?), other oil-derived products that don't biodegrade and inert metals, like alloys, gold and rare metals of the kind found in mobile phones, all might last as long.
View image of Will mobile phones be one of the artefacts we leave for future generations?
Glass is durable too, and can withstand high temperatures and pressures. You can imagine finding the "outlines or shape of smartphones," Syme says. Archer notes that the durability of glass means you could chisel 'ENJOY!' on a small sheet of glass in a concrete coffin with your body and it would be there to find with your fossil.
"To be 100% sure I would use diamond," Syme adds – it's immensely stable. Using a laser, you could etch a letter explaining the lengths you went to to get fossilised.
If you also want to pre-plan your archaeological context, Syme believes bitumen highways and the foundations of skyscrapers are contenders. "We've dug down deep into the ground to build these things. You'll be able to see… the layouts of cities still there," she says.
Remember, the words you write will fade and your deeds will be forgotten. But a fossil? That, perhaps, could last forever.
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I don't know how long this offer lasts, but just subscribed myself so it was good today! You can go to the beckettmedia site for more offers as well.

MAY BIRTHSTONE

Emerald, the birthstone for May, has been beloved for millennia, evoking rebirth and renewal. Widely regarded as the definition of green, emerald is the perfect color for spring. From the poetic description of Ireland as “the Emerald Isle” to the vibrant green of the famed gemstone itself—the May birthstone emerald has captured hearts and minds through the ages.

Variations of this rich green color suggest soothing, lush gardens. Legend has it that emerald has the

power to make its wearer more intelligent and quick-witted, and it was once believed to cure diseases like cholera and malaria. Today, it's the gemstone given for the 20th and 35th wedding anniversaries.

EMERALD BIRTHSTONE

EMERALD BIRTHSTONE MEANING & HISTORY

From Egyptian pharaohs to Inca emperors, emerald has enchanted royalty. Cleopatra was known to have a passion for emerald and used it in her royal adornments. The legendary Crown of the Andes, fashioned in colonial South America, is one example of how the Spanish revered the May birthstone. According to lore, its largest stone—now called the Atahualpa emerald—was taken from the last Inca emperor, Atahualpa, by conquistador Francisco Pizarro. The emerald and gold treasures recovered from the sunken 17th century Spanish galleon *Nuestra Señora de Atocha* represent a small fraction of the colonial riches sent to Spain from the New World.

The Crown of the Andes boasts an impressive 24 ct emerald center stone and 442 additional emeralds set in the intricately crafted golden headpiece. Photo: the Metropolitan Museum of Art

An emerald cross and gold rosary recovered from the Nuestra Señora de Atocha shipwreck. Courtesy: Eileen Weatherbee. Photo: Robert Weldon/GIA

The word “emerald” comes from *smaragdos*, ancient Greek for a green gem. Roman author Pliny the

Elder, who died in the 79 CE eruption of Mt. Vesuvius, wrote in his encyclopedic *Natural History* that "nothing greens greener." He also stated that the May birthstone had therapeutic properties that helped gem cutters: "(they) have no better method of restoring their eyes than by looking at the emerald, its soft, green color comforting and removing their weariness and lassitude." Science now proves this belief: The color green relieves stress and eye strain.

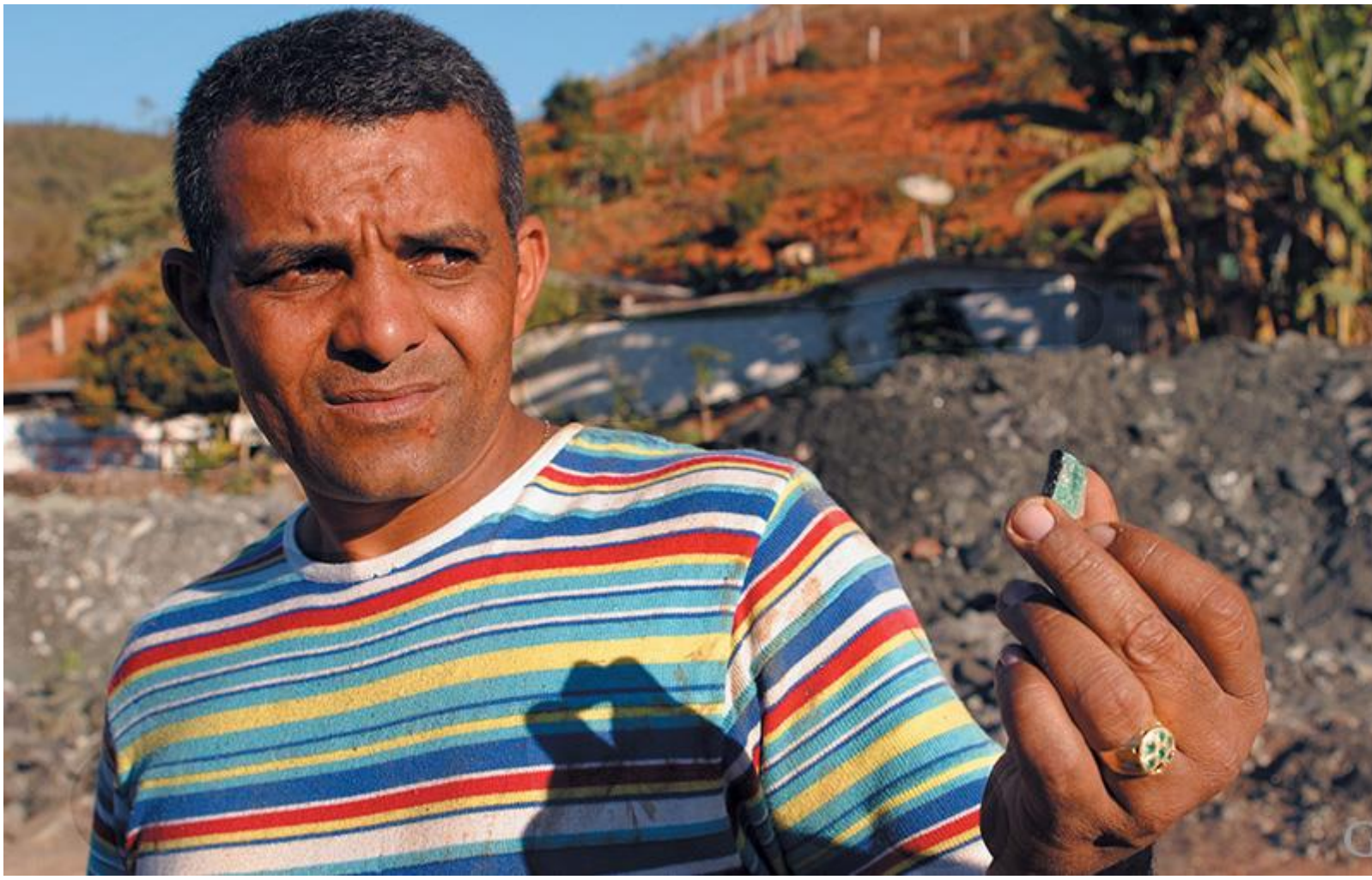
The green birthstone was also thought to have magical powers. By placing it under the tongue, one could see into the future. Some believed it made one an eloquent speaker and exposed lovers who made false promises.

WHERE ARE EMERALDS FOUND?

Colombia has been the source of the finest emeralds for more than 500 years, and Colombian emeralds are the standard by which all others are measured. Three mining sites in Colombia are particularly noteworthy: Muzo, Chivor and Coscuez. Each locality produces a range of colors but, generally speaking, darker tones of pure green emeralds come from Muzo. Emeralds that are lighter in tone and slightly bluish green are associated with Chivor. Slightly yellowish green emeralds are unearthed in Coscuez.

The lush green Andes Mountains tower over the deep tropical valleys around Muzo. Photo: Robert Weldon/GIA

The May birthstone is also found in the state of Minas Gerais, Brazil. One of the most productive sites for the green birthstone is the sophisticated Belmont mine. Capoeirana is another important locality, a rugged region worked largely by independent miners and small-scale operations.



An independent miner at the Capoeirana mining area holds a rough emerald. Photo: Eric Welch/GIA

The May birthstone can also be found in Africa. Zambia is a major source, and mines in the Ndola Rural Restricted Area are known for producing emeralds that are bluish green and darker in tone. Pakistan and Afghanistan are important producers as well.

EMERALD BIRTHSTONE CARE & CLEANING

Emerald is a 7.5 to 8 on the Mohs scale of hardness, so it is more susceptible to scratching than a diamond, which ranks 10 on the scale. The May birthstone is often treated to improve its color or clarity. Common treatment methods include:

1. Dyeing: Paler emeralds with multiple fractures may be dyed green to enhance their color.
2. Fracture Filling: Oils, waxes, and artificial resins are often used to fill surface-reaching fractures in

emeralds. The goal is to reduce the visibility of the fractures and improve the apparent clarity. The volume of filler material present can range from minor to significant; the different substances have varying degrees of stability.

The emerald birthstone requires some special care: Avoid exposure to heat, changes in air pressure (such as in an airline cabin) and harsh chemicals. Never put an emerald in an ultrasonic cleaner, as the vibrations and heat can cause the filler to sweat out of fractures. Filled emeralds can also be damaged by exposure to hot water used for washing dishes. The safest way to clean emeralds is to gently scrub them with a soft brush and warm, soapy water.

The beauty of emerald is seen in this 3.69 ct stone flanked by six diamonds. Photo: Robert Weldon/GIA. Courtesy: Ismael Daoud

The drop of honey acts as a lens. It focuses the light from the stone to project the star onto the surface of the honey drop. Use honey because it flows slow so the drop stays as a nice lens shape and the sugar in the honey raises the index of refraction to be closer to the quartz.

--- In LA-Rocks@yahoogroups.com, Scott Solar <scott.solar@...> wrote:
>
> Honey?
> On Apr 20, 2012 8:55 AM, "Calvin" <crabsucker@...> wrote:
>
> > **
> >
> >
> > 1) Sand a few places on your rose quartz. 220 grit is fine.
> > 2) Cool the stone in the refrigerator and put dabs of cooled honey on the
> > sanded places. The cooled honey does not flow as fast.
> > 3) On a clear day with no clouds, look for the stars on the drops of honey.
> > 4) Some drops of honey will only show a cats eye. Follow the ray to the
> > other side of the stone and look for other cats eyes. Eventually you will
> > find where separate cats eyes join and make a star.
> > 5) When you have the location of the star, grind that spot round and
> > polish it. Check the star and if it is not oriented good, then grind some
> > more.
> > 6) once it is oriented, cut the end off with a saw and finish the cab.
> >
> > --- In LA-Rocks@yahoogroups.com, "Shep" <freudonetoo@> wrote:
> > >
> > > Hi All,
> > > Collected some gemmy rose quartz a while back which I'm just getting
> > around to cabbing. I know some asterated quartz comes from this site but
> > how can I tell if my rose pieces are? And if they are, how would I orient
> > them for cabbing? I've never worked star rose quartz let alone star
> > anything so really have no idea how to work these pieces if they are,
> > indeed star roses.
> > > Thanks in advance,
> > > Shep

Submitted by Michele, from her apparently unlimited archives. Please forgive spelling and grammatical errors! And good luck with this project. We'd love to see the results at a future meeting!!!

To cheer you up, a cool dude with an even cooler car!