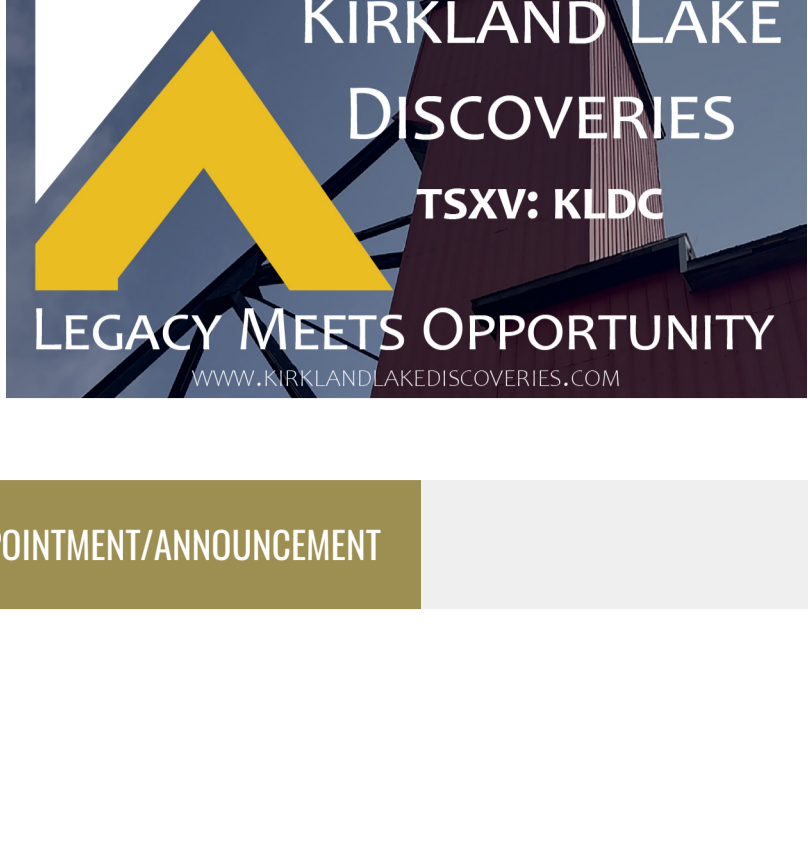
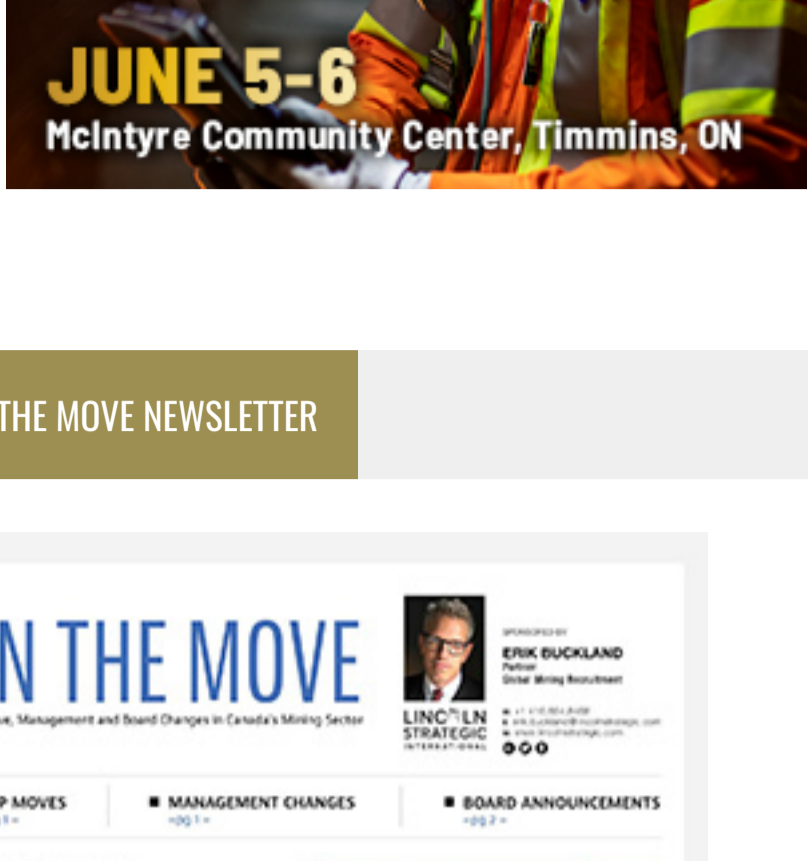


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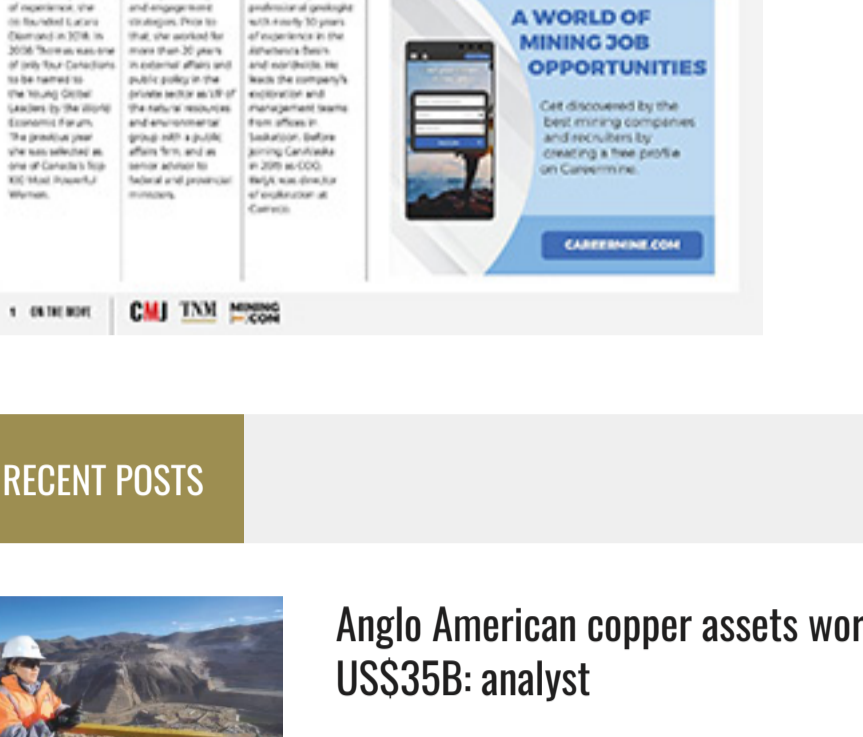
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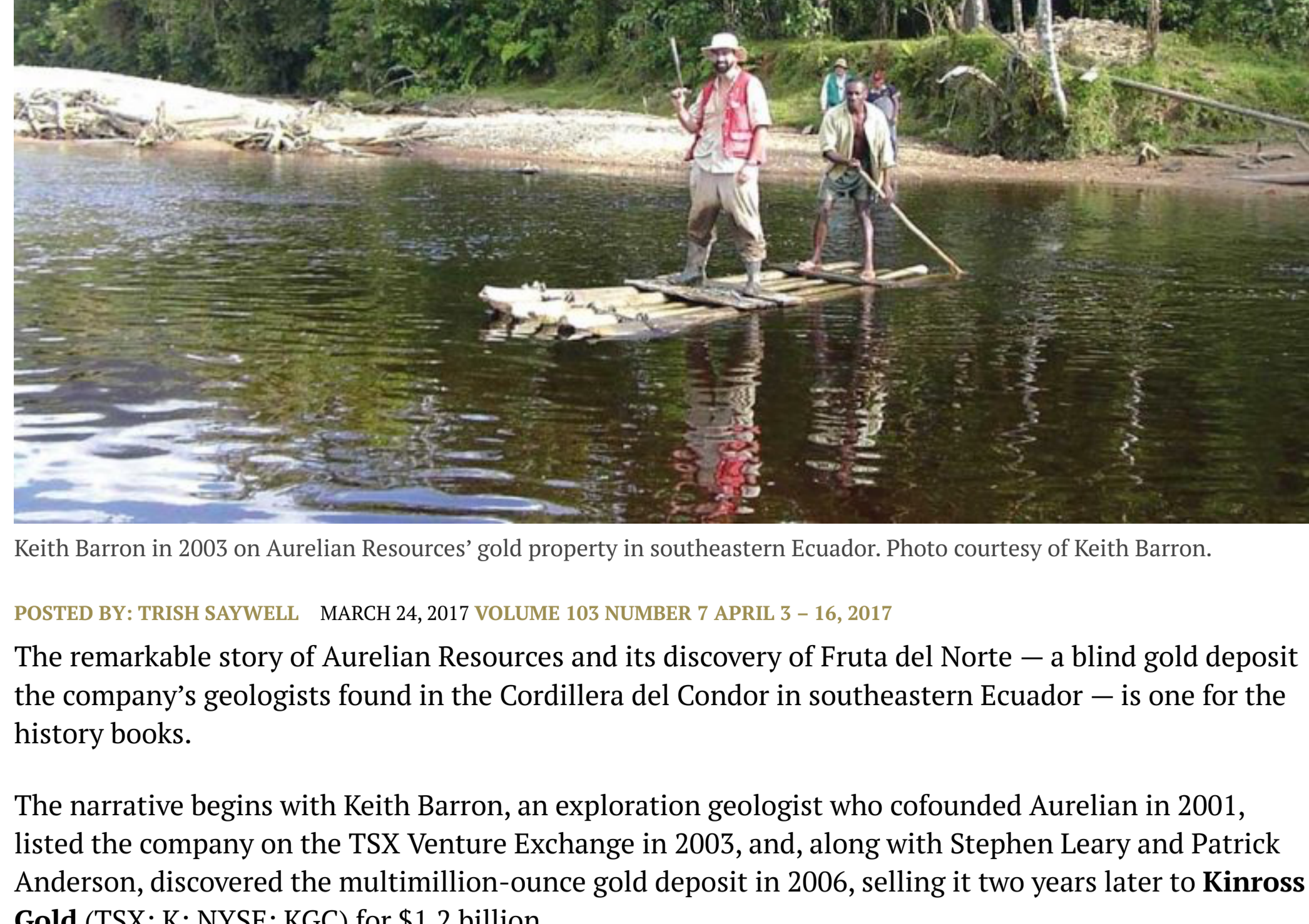
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## Keith Barron back on the hunt for riches of Ecuador's Lost Cities



Keith Barron in 2005 on Aurelian Resources' gold property in southeastern Ecuador. Photo courtesy of Keith Barron.

POSTED BY: TRISH SAYWELL MARCH 24, 2017 VOLUME 103 NUMBER 7 APRIL 3 - 16, 2017

The remarkable story of Aurelian Resources and its discovery of Fruta del Norte — a blind gold deposit the company's geologists found in the Cordillera del Condor in southeastern Ecuador — is one for the history books.

The narrative begins with Keith Barron, an exploration geologist who cofounded Aurelian in 2001, listed the company on the TSX Venture Exchange in 2005, and, along with Stephen Leary and Patrick Anderson, discovered the multimillion-ounce gold deposit in 2006, selling it two years later to **Kinross Gold** (TSX: K; NYSE: KGC) for \$1.2 billion.

Perhaps less well known is that at the time of the discovery, Barron had been looking for two famous gold-mining areas in the country, which historic Spanish documents and maps from the 16th and 17th centuries referred to as "Sevilla del Oro" and "Logrono de los Caballeros."

The quest began somewhat serendipitously in 1998, when Barron, on a field leave from a job in Venezuela, happened to enroll in a Spanish language school in Quito, Ecuador's capital city. To immerse himself in the language, Barron lived with a local family, the head of which was a history professor, Octavio Latorre, who had earned a PhD from Boston College.

The professor, delighted that Barron was a geologist, told him about seven ancient gold-mining areas or cities in the "Audiencia de Quito," or present-day Ecuador, which had been mined in the days of the Spanish conquistadors.



This map titled "The Gold Regions of Peru" was produced by Flemish cartographer Abraham Ortelius in 1574 and references storied gold-mining centres Logrono and Sevilla del Oro in modern-day Ecuador. Credit: Auriana Resources.

Five of the ancient mining centres had been rediscovered, most recently Nambija in 1981, and the remaining two — Sevilla del Oro and Logrono de los Caballeros — have yet to be found.

Nambija — last mined in 1603 — was found when a hunting party accidentally came across open tunnels in the jungle. The discovery sparked a gold rush, not all that dissimilar from the one at the Serra Pelada deposit in Brazil, which in the early 1980s attracted tens of thousands of artisanal miners to the site, 430 km south of the mouth of the Amazon River.

In Ecuador's case, 25,000 artisanal miners swarmed Nambija within months. About 2.7 million oz. gold was produced between 1981 and 2000, but an untold amount found its way onto the black market.

As such, few taxes were ever paid to the government and very little money flowed back into the surrounding communities. The miners also left behind a trail of destruction: a collection of unstable underground workings, open sewers, unreclaimed spoil heaps and damaged vegetation and wildlife habitat. In 2000, about 300 people perished when hills of mine waste buried the surrounding town.

"Nambija ended up being exploited in a chaotic fashion and is now considered as the world's worst mercury-polluted site," Barron says in an interview from his home in Switzerland. "The government thought that if they had found one of these lost places and secured it back in the day, they could have sold the rights to a company like Placer Dome, or to Homestake or Newmont."

Nambija had been a Spanish mine, and perhaps before that an Incan mine, and was mentioned in archival documents and maps, Barron says. So the government enlisted Latorre and a handful of other historians, and asked them to look for old mines that had been exploited by the Spaniards or the Inca or other pre-Columbian group before them. Their hope was that if any were found, they could be mined responsibly for the benefit not just of the local communities but all Ecuadorian people. A change in government, however, brought this work to a close, and the fruits of the historians' research was catalogued in a small paperback published in 1990 called *Investigación histórica de la minería en el Ecuador*.

Latorre was undeterred, however.

"The professor decided to continue with his work, and that's when I met him in 1998, purely by serendipity," Barron recalls. "He was intrigued that I was a geologist and wanted to tell me what he had been doing all those years. He had continued the research on his own dime after the government project ended, and when I met him he was extremely excited about two places — Sevilla del Oro and Logrono de los Caballeros."



History professor Octavio Latorre, who has helped Keith Barron in search for historic gold centres in South America. Photo courtesy Keith Barron.

What Latorre had found in historic Spanish literature, including reports of gold production, pointed to Sevilla del Oro and Logrono de los Caballeros as the sites of two famous gold-mining areas that operated in the 16th and 17th centuries, but whose locations had been lost over time in the jungle.

Latorre convinced Barron in 2000 to look for the two lost cities, and after spending two months pouring through the library of the United States Geological Survey in Reston, Va., and the Geological Survey of Canada in Ottawa, the young geologist returned to Ecuador in 2001 and focused his fieldwork in the provinces of El Oro, Loja and Zamora-Chinchipe, all of which had legacies of gold production.

The search for the two lost cities took a left turn, Barron says, when he and his colleagues found intensely altered breccias in outcrop near Alto Machinaza, and for the next five years explored the Aurelian concessions in the Cordillera del Condor, finding Fruta del Norte in March 2006.

Fruta del Norte made Barron for a wealthy man and he eventually moved to Switzerland, but he and Latorre continued their hunt for Sevilla del Oro and Logrono de los Caballeros. They hired archivists to help them pour through documents in the General Archives of the Indies in Seville, Spain, which is the main repository for documents from the Spanish colonial era.

"Seville used to be the historic capital of Spain, and that's where Barron and Latorre's archivists — Guadalupe Fernandez Morente and Esther Gonzalez Perez — found more than 100 documents relating to Logrono de los Caballeros and Sevilla del Oro ... while Barron and Latorre supplemented the research with archival searches in various libraries in Ecuador; the Archivo Historico Arzobispal and the Riva Aguerro Institute in Lima, Peru; the Biblioteca Nacional de España in Madrid; the Rare Book Section of the New York Public Library; the British Museum Library; and the Manuscript section of the Apostolic Library of the Vatican.

"Professor Latorre happens to be the brother of the Ecuadorian Ambassador to the Holy See, and he got us access to the Vatican library in Rome, and I've been there twice now," Barron says. "I went there last May to hunt down an interesting book that almost gives you a roadmap to Sevilla del Oro. It's an incredible thing to handle a document written in 1627. It has mentions of gold from all over the Spanish Empire, and I wish I had another lifetime to track them all down."

Barron says there are numerous mentions in the historical records of the presence of gold at Logrono and Sevilla del Oro, but it is unclear whether it was placer or hard rock. He also notes that many of the documents they have found over the last decade "are torn, worm-eaten or otherwise hard to decipher," and were written in an "obsolete version of the language — resembling Elizabethan English."

Occasionally, the documents have contained contradictory statements, he adds, and the settlements have been destroyed and at least twice moved. Nevertheless, he says, documents they have found mention both Sevilla del Oro and Logrono de los Caballeros as once important centres of gold mining, and his study of ancient maps and the geology has narrowed the search area. "Just because documents are very old, it doesn't mean they aren't accurate."

In 2004, in the New York Public Library's card catalogue in the rare books section, Barron found a map from 1574 called the "Gold Regions of Peru," which is from the world's first atlas. The map marked the settlements of Logrono and Sevilla del Oro, but "due to extreme age, it can only be considered as an approximation," he says. "What was intriguing was the relatively accurate positioning of the towns in the interior of what is now Ecuador." Latorre says this could only have been drafted by someone who had been on the spot or in dialogue with someone with firsthand knowledge of the area.

"There's this little point on the map, and it's a label on a river and says 'El Pongo' — a native word in the local dialect that means rapids," Barron continues. "It's a very, very narrow canyon with a furious rapid running through it in Peru, not far from the Ecuadorian border. This is the famous El Pongo de Manseriche, which is a narrow gorge through which the Marañon River passes — a treacherous rapid that conquistador Juan Salinas de Loyola descended in 1557."

Barron and Latorre surmise that Salinas de Loyola may have founded what became Sevilla del Oro in 1560, and quite possibly Logrono around 1568.

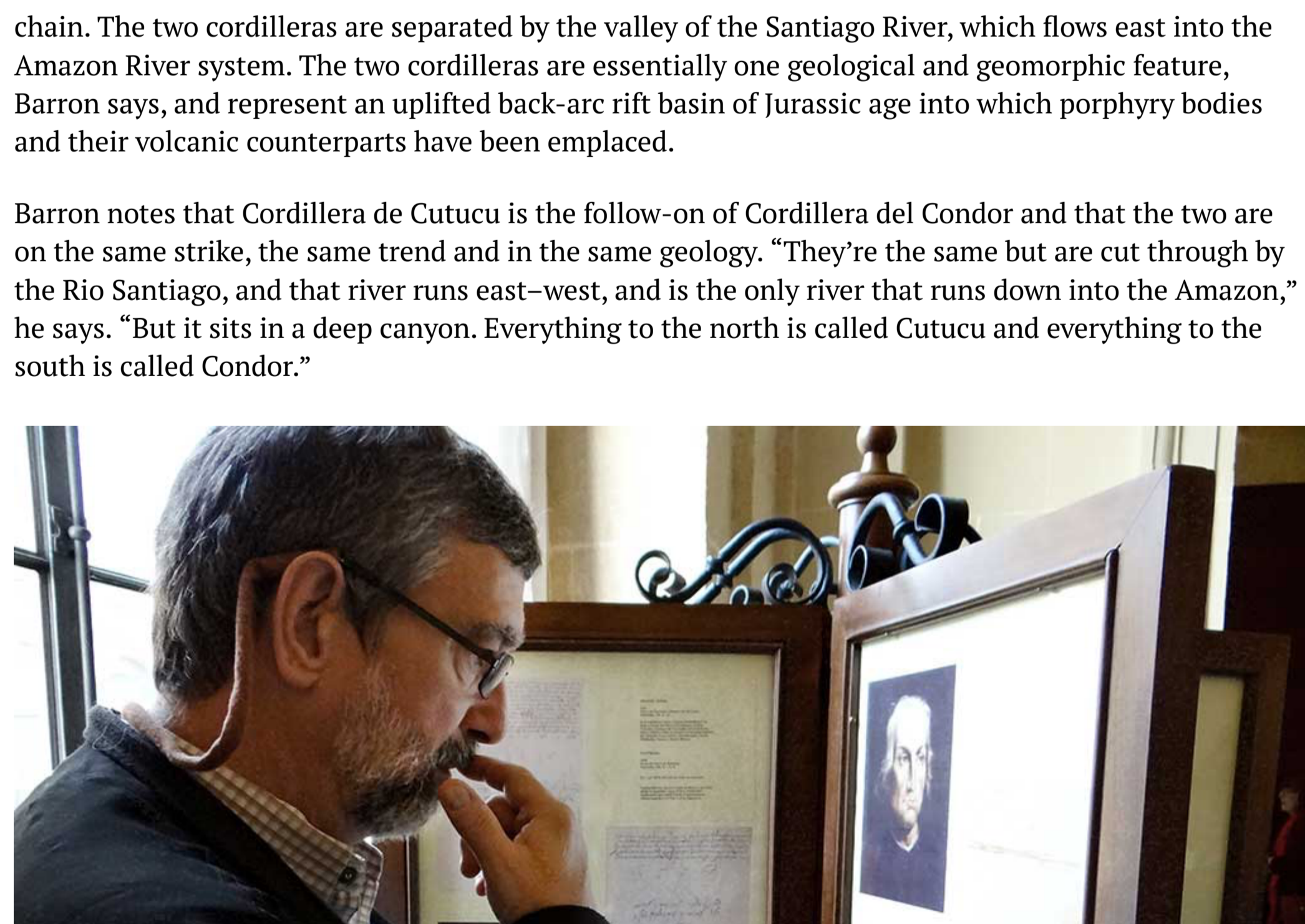
Barron has staked 2,080 sq. km — 1.5% of Ecuador's total landmass — in the Cordillera de Cutucu, where he says the two lost cities might be found. Fruta del Norte, in the adjacent Cordillera del Condor, is 90 km south of Barron's new Lost Cities project, and has vendid into **Aurania Resources** (TSX: ARU). The Nambija skarn deposits lie 95 km southwest.

"I didn't expect it to take as long as it did before Ecuador came to its senses and opened up its land registry so that we could acquire land again," he says. "They had closed it from 2008 right through until last year. When they reopened it they didn't even have any forms to fill out. That's why it took me until the end of December 2016 to get the titles awarded."

"I was worried that somebody might stumble upon it — that somebody walking around in the bush would stumble across some old pits and rock dumps, and find Logrono and Sevilla del Oro," he says. "It's lucky that nobody has done that in the last seven years. This area is virgin. It hasn't been tackled by mining companies before, though it has been mapped by oil companies because there is a producing basin to the north, but the infrastructure was poor up until a few years ago, when they built a road down the west side of the Cordillera. Before then there were no roads at all, and I think the canyon to the south, where the Rio Santiago sits, was an impediment."

Cordillera Cutucu and Cordillera del Condor form foothills on the Amazon side of the Andes mountain chain. The two cordilleras are separated by the valley of the Santiago River, which flows east into the Amazon River system. The two cordilleras are essentially one geological and geomorphic feature, Barron says, and represent an uplifted back-arc rift basin of Jurassic age into which porphyry bodies and their volcanic counterparts have been emplaced.

Barron notes that Cordillera de Cutucu is the same geology of Cordillera del Condor and that the two are on the same strike, the same trend and in the follow-on. "They're the same but are cut through by the Rio Santiago, and that river runs east-west, and is the only river that runs down into the Amazon," he says. "But it sits in a deep canyon. Everything to the north is called Cutucu and everything to the south is called Condor."



Keith Barron reading a letter by Columbus, at the General Archive of the Indies in Seville, Spain. Photo courtesy Keith Barron.

Barron points out that mining companies have explored south of the Rio Santiago in an incredibly well-endowed mineral belt. There are three copper porphyries in the pre-production (Pananzta, San Carlos and Mirador), right up to the southern side of the river, which were developed by Gencor and **BHP Billiton** (NYSE: BHP), and are now owned by Ecuacorriente, an Ecuadorian subsidiary of China's CRC-C-Tongguan consortium.

In addition to the 7.4 million oz. Fruta del Norte — now owned by **Lundin Gold** (TSX: LUG; US-OTC: LUNMF), which acquired it from Kinross in 2015 — there is also **Lumina Gold's** (TSXV: LUM) Santa Barbara deposit, and **Dynasty Metals & Mining's** (TSX: DMM) Jerusalem and Chinapintza deposits. There are at least 12 other copper porphyries in the belt, some of which are owned by David Lowell's group JDL Gold Corporation. (Lowell counts Escondida in Chile among his many major discoveries.)

"I have never been a believer that geology just stops because someone says it stops in a certain place — it's going to continue right on through the Jurassic belts, and when we start prospecting it, we'll find numerous anomalies," Barron says. "I have seen people panning gold who say there are others panning for gold too. We just haven't been on the ground to check it out because it's a massive, massive area — 208,000 hectares — so it's going to take a while."

Barron is planning an airborne survey "that should pop out any copper porphyries," and also do stream sediments over the whole project area, which will take a lot longer. "When we did stream sediments at Aurelian it led to the discovery of Fruta del Norte and over 30 different gold occurrences, so it's a powerful tool, and I know it works," he says. "Any exploration manager who has any guts should be tackling this thing. I say you need guts because there's little infrastructure and it's virgin territory, but, as demonstrated with Fruta del Norte, that's how you find the elephants."

Aurania is now in the midst of raising money — \$6 million — and, if all goes well, the company should start the airborne survey in June or July.

"For any geologist, putting this kind of historic narrative together with good geology is very, very compelling, and it's incredibly fun," he says. "It's like a dream come true ... I don't know what we're going to find, maybe nothing. It's in the hands of God — las manos de Dios — but all the indicators are there, and, as exploration geologists, this is what we do. We work on hunches, we sift through evidence, and sometimes we explore with historical narratives, as well."

In the meantime, professor Latorre is now 86 years old.

"He says he isn't passing on until we've found them," Barron says. "Sevilla del Oro and Logrono de los Caballeros are his babies. He has been working on this for a long time."

Barron says that "records are kept for the old empire, from the diaries of Christopher Columbus right up to the age of independence. In the archives there are 40,000 manuscript boxes containing 80 million pages of documents — an incredible resource and a World Heritage Site ... two archivists helpers worked there for a year and a half."

Barron says that the discovery of the New World was illegal to possess under colonial shipwrecks, but typically they were not preserved and were recast into coins when they reached Spain.

What has survived, however, are thousands of written accountancy records, annual reports and other correspondence, most of which is housed in the General Archive of the Indies. TNM

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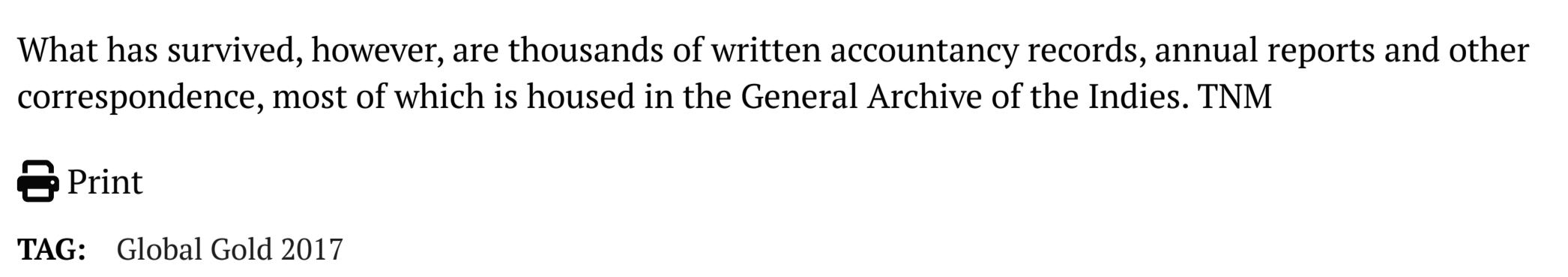
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