



Advancing Exploration

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Easy finds await

An explorer has seized a remarkable opportunity in the Simpson Desert. By **David Upton**

Not that long ago, many global miners deemed Australia a spent force in terms of exploration opportunity. A lack of discoveries encouraged the view that all the outcropping deposits had been found, while cover rocks over the remaining 75% of the continent made Australia less attractive than most other destinations.

What a difference five years has made. A series of discoveries – Cayley, Winu, Haverion, Boda, Oak Dam, Julimar, Hemi – has re-rated Australia's potential and helped bring global miners such as Anglo American and Freeport back to our shores.

Most of these discoveries have been made under cover. Precompetitive breakthroughs such as East Tennant suggest this is just the start of what can be achieved with hidden deposits.

Even more remarkably, it is increasingly clear we have not even found all the easy deposits that geologists can kick with their boots.

Exhibit 1 is the recent discovery by Geoscience Australia of an outcrop of 50% manganese oxide in the Carrara Range, near the northern end of the Northern Territory border with Queensland. A small group of GA scientists flown in by helicopter chanced on an outcrop about 20 metres wide and extending along strike for hundreds of metres.

The second exhibit is unlisted Plutonic, the latest vehicle for seasoned geologists Oliver Kreuzer and Kris Butera of Corporate Geoscience Group.

The pair have been behind a number of ASX companies, including Cygnus Gold, soon-to-be listed 92Energy – a Canada-focused uranium explorer – and Nickel X.

Last September, Plutonic pegged more than 8500 square kilometres in the Simpson Desert after innovative thinking and proprietary geophysics flagged the region as a potential Tier 1 mineral belt for gold and copper.

The ground also has rare earths potential in carbonatite intrusions, identified a few years ago in a Queensland government-funded study of biogeochemistry using spinifex.

The northwest trending belt, up to 65km wide, runs more than 220km from southwest Queensland into the NT and been dubbed the Champion Superproject.

Studies by Plutonic on limited historic exploration results have firmed up the geophysical evidence. The company's modelling suggests an iron ore-copper-gold corridor of Mesoproterozoic age – the same era as Olympic Dam and Cloncurry – overprinted by a big orogenic gold event about 400 million years ago.

The potential for orogenic gold arises in a number of ways. First, there is Champion's position on the edge of the North Australia Craton, along strike from the Tanami region and with all the geophysical signatures of that famous gold province.

Then there is the remarkable evidence from satellite images of giant systems of quartz reefs at the Wonderbra Boulevard area.

These need to be seen to be believed that such incredibly prospective outcrops can still be found in the 21st century.

Plutonic says there are at least 100 reef outcrops, none of which have been drilled or surface sampled effectively. One of the reef systems extends more than 20km. Other systems have been noted as being stained green with copper minerals, some as zones of quartz breccia and others with base metals and massive sulphides.

These reefs occur over an area of more than 120km by 50km and share many features with the giant gold deposits of the Central Victorian Goldfield.

If you think these fabulous quartz reefs in the desert sound a bit like the mythical Lasseret's Reef, it is because they might actually be one and the same. Plutonic executive chairman Butera is a bit of a history buff – as well as a lover of metalcore, which shows up in the names of the company's prospects.

In the 1990s Vietnam veteran Bill Decarli published a book that claimed to solve the mystery of Lasseret's Reef.

Decarli appears to have made a crucial connection that puts the fabled reef in southwest Qld, not in the Petermann Ranges



A quartz reef of more than 1km in Plutonic's Wonderbra Boulevard project area, part of a larger reef more than 20km long.

in Western Australia where most searches have taken place.

Butera said Decarli's research implied Lasseter did not actually find the reef in the first place but went looking for it because of what he was told by Joseph Harding in 1917, when both men were in a hospital in Adelaide.

"Harding was a surveyor but he also stole cattle in northern South Australia and drove them all the way to his brother's butchers shop in Cloncurry, staying off the tracks to avoid detection," he said.

"One of the key pieces of information he gave Lasseter was to head 274 degrees from Carnarvon. This steers you into the Indian Ocean, but that did not stop the popular idea of the reef being somewhere in central WA.

"Decarli pointed out there is also a Carnarvon in Queensland, now known as the town of Rewan. Harding's directions from Rewan and his descriptions of landmarks near the mythical reef are an intriguing match with one of the quartz reefs in our project area."

Plutonic is understandably low-key about the possibility of finding Lasseter's Reef. Hanging your reputation on that endeavour is a public relations disaster waiting to happen.

Besides, if you did find the reef, it might well disappoint investors in a modern gold company, where anything less than 1 million ounces is considered a failure.

Tier 1 gold discoveries are today's benchmark, and Plutonic appears to have plenty of opportunity for those and copper-gold IOCGs without drawing on the Lasseter mystery.

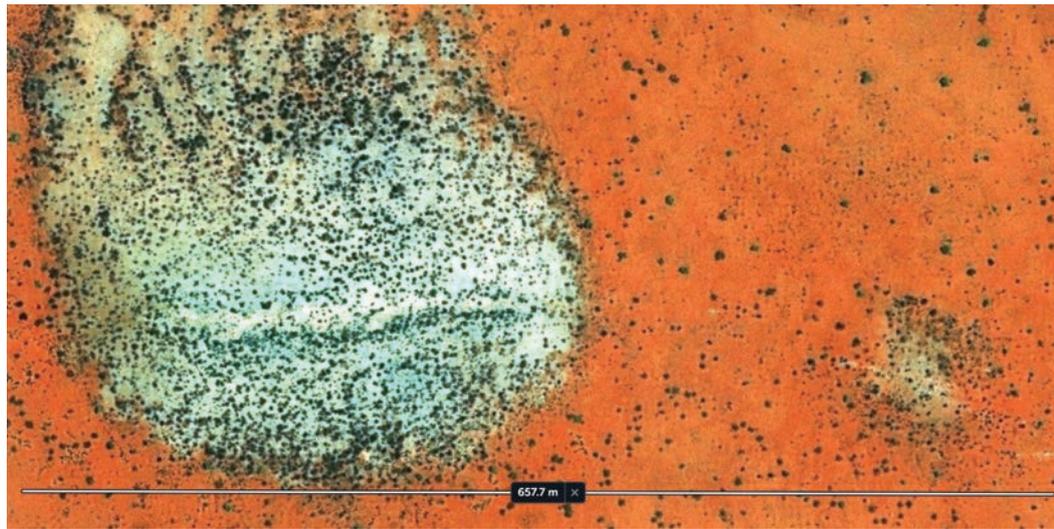
Butera said Champion came together over a number of years, beginning with continental-scale geophysical studies with one of their frequent collaborators, Amanda Buckingham of Fathom Geophysics, who has also come on board as a shareholder in Plutonic.

Buckingham developed proprietary algorithms for processing geophysical data as part of her PhD. These map out magnetic and gravity structures and ridges, which are shown to coincide with between 80% and 90% of the Tier 1 copper-gold systems in eastern Australia.

Looking for under-explored regions with a high density of these gravity ridges drew Plutonic to the Simpson Desert. Compiling historical exploration data, as limited as it is, and satellite imagery, added to the picture of a highly prospective region.

"BHP and CRA drilled some holes in the 1980s, hoping for lookalikes of Olympic Dam, but it appears they couldn't really decide on the exploration model for the region and moved on," Butera said.

"We had already identified IOCG potential before we came across those records, based on my PhD on IOCGs in the Eastern Succession of Mount Isa.



A possible copper-stained quartz reef, also in Plutonic's Simpson Desert ground.

"Down in the Simpson Desert, we are in the right place on the edge of the cratonic margin and we can see big magnetic features like those that run through the Eastern Succession. This really looks like the right place to be for IOCGs as well as orogenic gold."

The only recent exploration was by Krucible Metals between 2008 and 2014. Krucible, now known as Chase Mining Corporation, and its exploration efforts came to a premature end when the company was taken to court for drilling without a permit.

However, it did manage a shallow 3 metre intercept of 2.4% copper at what has become Plutonic's Champ prospect, while some other holes hit hematitic breccia that is a classic sign of an IOCG.

Oddly, some drill holes ended in copper sulphide mineralisation or very wide quartz veins on the NT side.

"They left all this excellent information for us, like quartz breccias and rock chips containing gold and base metals," Butera said.

"It was a really nice start for us, but they didn't necessarily have an overall concept for that area. We have analysed all of the work done by government and companies and basically come to the realisation we have a 170 km, subcropping IOCG mineral belt that has had no deep drilling at all.

"This really stands out from the geochemistry, which was done well by Krucible.

"The geochemical association was typically copper-gold-bismuth, moly, uranium and some rare earths, which is a signature for IOCGs."

Plutonic is preparing to launch an initial public offering to raise the funds to test its best targets.

The Champion Superproject is a major part of the investment case, however, just as big is the company's Georgetown Superproject in northeast Queensland,

targeting intrusion-related, epithermal and orogenic gold. Across both areas, the company has identified more than 10 targets with Tier 1 potential.

The exploration strategy is refreshingly direct and old-fashioned. Forget the kind of big geophysical surveys you might expect when you have a whole new province. When you have outcrops like these, just get out there and drill the sulphides you can already see.

"We might run some narrow-targeted induced polarisation or magnetotelluric surveys to screen for the very best targets, given we have a long list of potential Tier 1 prospects, but the strategy is to get out there and test as much as we can with just one or two well-designed diamond drill holes," Butera said.

"We think this ground will deliver many discoveries, and have set our sights on becoming known as a company that delivers find after find. There has not been anyone like that really since the old WMC days."

If the ground does yield rich discoveries, Plutonic will have enough to keep it busy for the next 20 years.

Butera said there had already been interest from potential joint venture partners, however, the company would not look at partnering up until it had drilled.

Plutonic will be fascinating to watch and it is hoped investors provide the backing for it to go exploring on the ground.

The region might be almost entirely untested, however, the evidence is compelling and the address is one the best in Australia for exploration.

This is confirmed by the second stage of Geoscience Australia's Exploring for the Future program taking in much of Plutonic's Champion Superproject ground.

"I do ask myself why others have not done this and there's no real answer to this," Butera said.

"Sometimes the universe just provides the right opportunities at the right time." **AMM**