

MINING.

STATE DIAMOND FIELDS.

(BY A. R. PIKE, COPETON DIAMOND FIELD.)

In a report in the "Herald" on December 17 of the finding in Australia of a diamond which was sold for £400, there appeared some information about our diamond output. The stone in question weighed 26 carats, and Mr. E. J. Coote is reported to have said that he thought it "easily establishes a record for Australia."

A pamphlet, "The Gem Stones of New South Wales," has been compiled by G. W. Card, A.R.S.M., curator of the Mining Museum, Sydney, in which it is recorded: "Some years ago a 28-carat stone was found at Mount Werrong, in the Oberon district." The Mount Werrong stone still holds the record. Again, quoting from Mr. Coote's statement, he has said: "Emmaville, Capertee, Tingha and Gulgong are the most productive centres in New South Wales." A few diamonds were found in the Ruby Hill tin mine, near Emmaville, and the same thing applies to a few diamonds being obtained from Tingha. Neither Emmaville nor Tingha could be classed as diamond producing centres, as mining for these stones is not done there. Capertee mentioned may be a recent diamondiferous find, or it may be a misprint for Copeton.

Gulgong was developed for its rich alluvial gold deposits. The wash was puddled and then treated in a streaming box for its included gold. This streaming method lost many of the diamonds contained in the wash. I was engaged to go to Gulgong, and when there introduced the hand-sifting method, in a tub of water. This hand-pulsating of the wash saved all the diamonds, which were easily seen when the sieve was overturned on a table with a sand-covered top. Gulgong produced diamonds, and it is reported in "Pittman's Mineral Resources," page 386: "During the first five months of systematic washing over 2500 diamonds were discovered. The largest gem was a colourless octahedron weighing 64 carats, another weighing 3½ carats was also found."

I have been producing rough diamonds at Copeton and Gulgong for thirty years. I have never used nor have I seen a diamond-saving sieve used so small in the mesh that it would retain a diamond weighing 1-22 of a carat. These tiny diamonds, if they are in the wash, pass through the sieve and are in the finer residue called tubings. This fine deposit is streambed in a sluicibox for the tin ore inclusions, or gold only. The Copeton field has been proved by development work to be one of the richest alluvial diamond-producing centres in the world, carrying an important asset in the diamond-bearing gravels—tin oxides—often found in rich deposits."

Diamonds found in the Copeton-Inverell field, just as they come from the washing plant, unsorted, sometimes average two diamonds to the carat. This was a well-known feature at Ryder Bros.' claim, situated above Howell, at the head of the diamondiferous run. By far the greater number of parcels containing the gems there were either two, or two and a half diamonds to the carat. Parcels of stones averaging three diamonds to the carat, just as they came from the mine, have very often been obtained from Collins's Hill, Streak o' Luck, Deep Shaft, Davis's Block, The Star, The Koh-i-noor, and the Old Farm mines. In these parcels 1 and 1½ carat stones were seen, and sometimes 2 and 2½ carat gems glistened with the rest. Occasionally a 3 and 4 carat diamond came from this field, and one stone obtained weighed 7½ carats. Parcels of diamonds that averaged 5 and 6 and even 7 stones to the

weighed 7½ carats. Parcels of diamonds that averaged 5 and 6 and even 7 stones to the carat are sometimes obtained. These smaller stones were mostly won from a light deposited wash swept to the outer rim of the deep channels, wherein the larger diamonds and heavier inclusions rested.

Some phenomenal returns have been obtained on the Copeton field. Some years ago an oil drum full of wash deposit was hand-sifted in a tub of water at Kirk's Hill mine. From this small amount of diamond wash 364 diamonds, weighing in the aggregate 167 carats, were obtained, which was between two and three diamonds to the carat. Four loads of this rich wash produced 2cwt of tin oxides and over 1000 carats of diamonds. This fine parcel of stones was sold in Inverell for 4/10 a carat, the best price obtainable at the time.

Two shovelful of wash taken from the Old Farm mine yielded 50 diamonds, and this deposit returned between 40lb and 50lb of tin per load. Ten loads of surface wash from the Round Mount mine produced 1100 carats of diamonds. At the Deep Shaft claim one man with a diamond sieve hand-sifted in a tub of water over 400 diamonds from the wash deposit in one day, two of them being black diamonds—borts. The tin inclusion in this wash often returned as high as 20lb to the load. One shaft when bottomed at the Streak o' Luck mine produced nine diamonds from a few buckets of the wash. These nine diamonds weighed a little over eight carats. The Malacca Company at one washing produced a saucerful of diamonds and 15 tons of stream tin. This saucer containing the diamonds was exhibited in a store window in Inverell. A long list of rich returns could be mentioned to prove further the point that the Copeton field has produced great numbers of diamonds, not very small stones only but gems of good commercial value. The shallow ground on this field has been worked out, and the continuation of these tin and diamond deposits extend into the basalt-capped hills. These areas are beyond the prospector's finances to open up, and there it remains, undeveloped, with every probability of being as rich as the joining claims were.

The Copeton field is miles wide in many places, and extends from Ryder's old claim on to Staggy Creek, fully 20 miles in extent. This has all been proved diamond and tin-bearing ground. Along this run prospectors have opened up claims, often from the surface into the basalt hills for a few hundred feet. These exploring drives produced the gem stones and tin in many instances. A dip in the granite bottom on which the stream deposits rested was revealed, and often water was met with beyond the individual miner's power to contend with. From Staggy Creek many miles onward towards the Bingara diamond fields the basalt extends unprospected country.

Many years ago a parcel of diamonds was submitted to Messrs. Ford and Wright, diamond cutters, of London, in order that a report from expert authorities should be in the Mines Department. The report came to hand and was printed by the Department. The submitted parcel came from the Crown Jewel mine, now called the Streak o' Luck claim, at Copeton. Extracts from that report form conclusive evidence of the quality of Australian diamonds. Mr. Atkinson, the firm's manager, in that report states:

"No. 2 parcel, one cut and polished, the other left in its rough state to show the difference; the one cut and polished proves a brilliant of the finest water.

"No. 3 parcel contains one diamond. When cut and polished is about as fine a brilliant as it is possible to get, be it from Golconda, Borneo, Brazil, or Jagersfontein."

Further on in this report Mr. Atkinson states: "In proportion to their production, Aussies find the most white diamonds.

See below for transcription

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Neither Emmaville nor Tingha could be classed as diamond producing centres, as mining for these stones is not done there. Capertee mentioned may be a recent diamondiferous find, or it may be a misprint for Copeton. Gulgong was developed for its rich alluvial Gold deposits. The wash was puddled and then treated in a streaming box for its included gold. This streaming method lost many of the diamonds contained in the wash. I was engaged to go to Gulgong, and when there introduced the hand-sifting method, in a tub of water. This hand-pulsating of the wash saved all the diamonds, which were easily seen when the sieve was overturned on a table with a sand-covered top. Cudgong produced diamonds, and it is reported in "Pittman's Mineral Resources," page 386: "During the first five months of systematic washing over 2500 diamonds were discovered. The largest gem was a colourless octahedron weighing 53/4 carats, another weighing 31/4 carats was also found." I have been producing rough diamonds at Copeton and Gulgong for thirty years. I have never used nor have I seen a diamond-saving sieve used so small in the mesh that it would retain a diamond weighing 1-32 of a carat. These tiny diamonds, if they are in the wash, pass through the sieve and are in the finer residue called tubings. This fine deposit is streamed in a sluiceway for the tin ore inclusions, or gold only. The Copeton field has been proved by development work to be one of the richest alluvial diamond-producing centres in the world, carrying an important asset in the diamond-bearing gravels - tin oxides - often found in rich deposits." Diamonds found in the Copeton-Inverell field, just as they come from the washing plant, unsorted, sometimes average two diamonds to the carat. This was a well-known feature at Ryder Bros. claim, situated above Howell, at the head of the diamondiferous run. 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One shaft when bottomed at the Streak o' Luck mine produced nine diamonds from a few buckets of the wash. These nine diamonds weighed a little over eight carats. The Malacca Company at one washing produced a saucerful of diamonds and 15 tons of stream tin. This saucer containing the diamonds was exhibited in a store window in Inverell. A long list of rich returns could be mentioned to prove further the point that the Copeton field has produced great numbers of diamonds, not very small stones only but gems of good commercial value. The shallow ground on this field has been worked out, and the continuation of these tin and diamond deposits extend into the basalt-capped hills. These areas are beyond the prospector's finances to open up, and there it remains, undeveloped, with every probability of being as rich as the joining claims were. The Copeton field is miles wide in many places, and extends from Ryder's old claim on to Staggy Creek, fully 20 miles in extent. 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Mr. Atkinson, the firm's manager, in that report states: No. 2 parcel, one cut and polished, the other left in its rough state to show the difference; the one cut and polished proves a brilliant of the finest water. No. 3 parcel contains one diamond. When cut and polished is about as fine a brilliant as it is possible to get, be it from Golconda, Borneo, Brazil, or Jagorsfontein. Further on in this report Mr. Atkinson states: "In proportion to their production, Australia finds the most white diamonds. There is always a good demand for white stones, as, being small, they are the most suitable to set around other coloured gems. Mr. Thos. Davis, F.G.S., and Mr. Etheridge, in furnishing their report to the Mines Department upon the submitted parcel, states "The diamonds of New South Wales in their physical character are more nearly allied to those of Brazil than any other country. They have been largely sold in London as such." The future of the diamond mining industry of New South Wales depends upon two important developments being carried out. It forms past history that I, with a mate, John O'Donnell, discovered the first diamond in situ (matrix) of Australia, in a dolerite rock which intersected the granite in the form of a dyke. This structure is in a tunnel at Oakey Creek, Copeton, in close proximity to prove alluvial diamond deposits. This historical diamond in matrix I still hold. It was on view before the leading diamondologists. Assembled in congress in England and America. Professor David, F.R.G.S., who had the exhibit in his charge, wrote: "It was pronounced thoroughly genuine and of the highest scientific importance." If the Oakey Creek dolerite was tested for its diamond inclusions and proved a paying proposition, then the industry would advance in leaps and bounds owing to the permanency of the undertaking. Several other dolerite structures are known to exist in the Copeton diamondiferous area. No doubt some day they will receive the development work that their importance warrants. The second point that would lead up to a renewed activity on the Copeton fields would be the opening up of some of the deep country I have outlined, designated as "deep leads," beneath the basalt hills. If these proved as rich as the adjoining shallow ground has been, with the higher price obtainable for tin ore and the advanced prices now paid for our gem stones, the diamond industry would be on a sound basis.

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