21 C.—4.

Mr. Leslie McArthur is reported to have made over a hundred assays of ore coming from the field, which gave an average of 122oz. of silver to the ton; and 225lb. of ore was sent from the Prospectors' Claim to the School of Mines, Thames, and subjected to two different methods of treatment. Assays were made from the pulverised ore, showing that it contained 11dwt. 8gr. gold and 63oz. 19dwt. silver to the ton. The first lot was treated by the ordinary pan-process—namely, four hours' hot amalgamation with chemicals, at the rate of 20lb. of salt, 10lb. of copper-sulphate, 10lb. iron-sulphate, and 5lb. of alum to 2,000lb. weight of ore. This treatment only extracted 70·3 per cent. of the assay-value. The second lot, after being crushed dry, was subjected to a chloridising roasting with 6lb. of salt and iron-sulphate, and afterwards treated by hot amalgamation with chemicals in the pans, yielding 93 per cent. of the assay-value. Some small parcels were also forwarded to Sydney for treatment, which gave payable results.

forwarded to Sydney for treatment, which gave payable results.

The question as to whether the lodes will pay by working them in a face without selecting the ore will soon be determined, as the crushing plant erected by the prospectors is now at work, and this will afford facilities to the adjacent claimholders to get parcels tested to prove the value of their claims. This could not be done before unless at an enormous cost, as it is only recently the road has been completed into the field from the Whangarei-Kawakawa Road. Even now this road

will be impassable for wheel-traffic during the winter months.

Judging from the formation of the country and the character of the lodes found in the Puhipuhi district, there is a fair probability that some further good discoveries will be made in the locality, and also between Puhipuhi and Helena Bay. The same belt of country extends towards Cape Brett, but the quartz hitherto found at the latter place is of quite a different character from that found at Puhipuhi. The occurrence of antimonial or ruby silver in some of the lodes is an indication that richer stone will be obtained below the water-level. At least, this has been the case in some of the argentiferous lodes on the Pacific Slope where ruby-silver ore was found near the outcrop. The rough and broken nature of this country, without roads or even good tracks, will make the development of the mines a slow process. Nothing but prospecting can be carried on until the country is more opened up. The prospectors, however, deserve the highest credit for the perseverance and energy they have displayed since the field has been opened for mining. They have done a great deal of prospecting-work, and opened out their mine so that the crushing plant can be kept fully at work for a considerable time on the ore now in sight. The following is a list of fire-assays made from different lodes in the prospectors' ground by Mr. George Peel, who is in charge of the reduction plant:—

No. 3 Reef* at No. 2 Level, north and south of Sample.							Silver. Oz. dwt. gr.		
Winze. Silver. No. 2, \parallel taken from the Fluming Leve								₽.,	
Sample.			z. dw	vt. gr.	width, 6ft	40	0	0	
No. 1 ⁺ , 10ft. north	of winze on ree				No. 3,¶ taken from the Fluming Level,			_	
No. 2, 20ft.	, "	20		$\begin{array}{ccc} 6 & 0 \\ 0 & 0 \end{array}$	width, 6ft	40	0	0	
No. 3, 30ft.	, ,,	18		3 0	T1 . T .				
No. 4, 40ft.	, "	20		0 0	$Elsie \ Reef.$				
No. 5, 50ft.	, ,,		-	8 0	No. 1, taken from the cap, width 6ft	40	3	0	
No. 6, 60ft.	.11		$0 \ 1$		No. 2, " "	38	10	0	
	, ,,	1		0 0	No. 3, " " "	50	0	U	
No. 8, 80ft.	, ,,			0 0					
No. 9, 90ft. " " 100 3 0 No. 1. 10ft. south of winze on reef 166 10 0				Mary Reef (width, 4ft.).					
No. 1, 10ft. south o	i winze on reei	1.0		-	No. 1, sample taken from the cap	43	0	0	
No. 2, 20ft.	"	16		0 0	No. 2, " "	56	0	Ō	
No. 3, 30ft.	"			$\begin{array}{ccc} 3 & 0 \\ 0 & 0 \end{array}$	No. 3, " "	18	Ō	0	
No. 4, 40ft.	"	,	-		No. 4, " "	13	0	0	
	"			$\begin{array}{ccc} 0 & 0 \\ 0 & 0 \end{array}$, , , , , , , , , , , , , , , , , , , ,				
No. 6,‡ 60ft.	"	6)()	0 0	Mary Reef (10ft. in width).				
Samples taken from Wilson Reef. No. 1, taken in level above wheres							0	0	
No. 1,§ taken from the Fluming Level, No. 2, " "							6	ŏ	
width, 6ft			80	6 0	No. 3, " "	10 33	3	Ō	

^{*} Specimens tested from this reef gave a return of 1,000oz. to 2,000oz. † No. 1, trace of gold. † No. 6, strong trace of gold. § No. 1, 13dwt. of gold. || No. 2, 6dwt. of gold. ¶ No. 3, 10oz. of gold.

If these were average samples taken from the different lodes, and if only 50 per cent. of the silver be extracted in treating the ore in bulk, then the No. 3 lode, which is more opened up than any of the others, ought to pay for working and leave a fair profit. The average of the nine assays made from this lode gives 1280z. 4dwt. 5gr. of silver to the ton. On commencing to crush a small parcel with the plant, Mr. Peel treated 1cwt. of pulverised ore in one of the pans, which yielded 120z. of bullion, or at the rate of 240oz. to the ton; but no doubt this was some of the picked ore; at the same time it showed that the lode contained some rich ore, and that the plant was capable of extracting the metal.

Prospectors' Plant.—The plant consists of a stone-breaker, one pair of Cornish rolls, pulveriser, four amalgamating-pans, two settlers, and an amalgamating-barrel; an assay office being connected with the same building. The plant is driven by a Pelton water-wheel 6ft. 6in. in diameter. A dam has been constructed in one of the branches of the Tangiapakura Creek, by having large kauri logs placed across a narrow gorge, and well stayed with backstays footed into the solid rock. The face of the logs is dressed to receive planking, being boarded on the front side with sawn planks 6in. by 3in. The dam is about 25ft. high, and 55ft. wide at the top. The object of this dam is not so much for storage as it is to raise the water and keep a small supply in moderately dry weather. From the dam the water is conveyed for about 10 chains in a flume, 2ft. 6in. wide