

The following is a statement showing the quantity of quartz crushed and tungsten concentrates obtained during 1921 :—

Name of Mine or Company.	Locality.	Quartz crushed.	Scheelite Concentrates obtained.		Value.	
		Tons.	Tons.	cwt. lb.	£	s. d.
Dominion Consolidated Company*	Wakamarina, Marlborough	430	15	0 0	750	0 0
Black and McPherson	Glenorchy, Lake County	..	4	4 0	168	0 0
Logan and Paulin	..	..	1	9 41	73	8 3
John Tripp	..	..	3	12 15	180	6 8
Northcoat and Paulin	..	..	0	12 32	30	14 4
A. Hood	..	..	2	12 0	130	0 0
Birse Brothers	..	..	1	0 51	51	2 9
Tripp and Gaskell	..	..	0	13 29	33	3 0
Glenorchy Scheelite Company	..	45	9	4 0	368	0 0
Totals	..	475	38	7 56	1,784	15 0

* In addition to scheelite concentrate, gold to the value of £1,390 9s. 8d. was obtained.

IRON.

During the year the Onakaka Iron and Steel Company was engaged upon the construction of a blast-furnace installation on its lease at Onakaka, situated near Parapara, between Takaka and Collingwood. A description of this installation is contained in the report of Mr. J. F. Downey, Inspector of Mines, which appears in Annexure A hereto. The limonite deposit of this locality is of great extent, and is estimated in "Iron-ore Resources of the World," vol. 2, p. 889, published by the International Geological Congress, to contain 64,000,000 metric tons, of which about 30,000,000 tons occur in the Onakaka Block.

At Onakaka the ore and crystalline limestone flux occur at an altitude of about 1,200 ft. above the works, and they are conveyed thereto by aerial tramway 8,000 ft. in length.

On the 26th April, 1922, the blast furnace was blown in, and was kept in blast until the 4th May, about 80 tons of pig iron being produced. The furnace-charge consisted of Onakaka limonite, Onakaka crystalline limestone flux, and coke from Wallsend Colliery, Borehole seam, New South Wales, containing 0·37 per cent. sulphur. The results attained were very satisfactory, a soft grey marketable foundry pig iron being produced, as shown by the following analyses of samples taken by me and analysed by Dr. J. S. MacLaurin, Dominion Analyst. No doubt after a more extended run the quality of the iron would have been even better.

TABLE SHOWING THE CHEMICAL COMPOSITION OF ONAKAKA PIG-IRON (TAPPED 29TH APRIL, 1922), AND, FOR COMPARISON, THAT OF THE PRINCIPAL BRANDS OF FOUNDRY PIG-IRON MANUFACTURED ELSEWHERE.

Brand of Pig Iron.	Chemical Composition per Cent.							Kind of Iron.
	Iron.	Graphitic Carbon.	Combined Carbon.	Silicon.	Phosphorus.	Sulphur.	Manganese.	
Onakaka, sample 2	92·10	2·89	0·19	3·92	0·22	0·04	0·64	Foundry.
Carron, Scotland (as imported to New Zealand)	91·82	3·50	0·14	2·80	0·70	0·035	1·00	No. 1 foundry.
Ditto	92·63	3·35	0·20	2·15	0·70	0·06	0·91	No. 2 foundry.
Summerlee (as imported to New Zealand)	92·03	3·00	0·25	2·75	0·80	0·03	0·85	No. 3 foundry.
Lithgow (Hoskins), New South Wales, 1914	..	..	..	2·00	0·85	0·03	1·00	Foundry.
Characteristic samples quoted in "The Manufacture and Properties of Iron and Steel," by H. H. Campbell	92·37	3·52	0·13	2·44	1·25	0·02	0·28	No. 1 grey.
	92·31	2·99	0·37	2·52	1·08	0·02	0·72	No. 2 grey.
Alabama	..	3·49	0·07	2·8 to 3·5	..	..	..	No. 1 foundry.

ANALYSES OF ORE, FLUX, AND SLAG.

	Iron-ore (Limonite).	Crystalline Limestone (Flux).	Slag from Furnace.
Silica (SiO ₂)	12·13	10·26	40·03
Alumina (Al ₂ O ₃)	2·79	2·12	12·87
Ferrous oxide (FeO)	..	..	2·73
Ferric oxide (Fe ₂ O ₃)	71·66*	1·76	..
Titanium dioxide (TiO ₂)	0·20	0·17	0·49
Lime (CaO)	0·10	47·10	40·27
Magnesia (MgO)	0·33	1·24	1·19
Phosphorus pentoxide (P ₂ O ₅)	0·23	0·07	0·10
Manganous oxide (MnO)	0·72	..	0·45
Calcium sulphide (CaS)	..	..	2·54
Sulphur (S)	0·13	0·21	..
Loss on ignition	12·01	37·18	..
	100·30	100·11	100·67

* Equivalent to metallic iron, 50·16.

CINNABAR.

Operations by the New Zealand Quicksilver Mines (Limited) at Puhipuhi, North Auckland, were principally in the nature of development. During the year 1,575 lb. of quicksilver, of nominal value £231, was obtained. Three small parties operating in the same locality were engaged in unproductive work.

In the Greenvale Survey District a discovery of cinnabar was made by J. B. Graham and party, who have since been engaged prospecting the deposit.

PETROLEUM.

No drilling was done by the Taranaki Oil-wells (Limited) and the Blenheim Oil Company (Limited), at Moturoa, both companies having gone into liquidation.