

Chiltern.

There has been a great deal of mining carried on in this district, but at the present time there is very little doing, with the exception of the Chiltern Valley Gold Mining Company, who have about 175 men employed, exclusive of those engaged in procuring firewood and mining timber. The depth of their workings is 312ft., and the principle on which the ground is worked and taken out, the washdirt puddled and sluiced, is similar to that described in the Madam Berry Company's mine at Creswick. The amount of washdirt that they take up is about 10,000 trucks weekly, each truck holding about seven cubic feet, and they estimate three of these trucks to the load. This company's mine is ventilated by two air ducts, which are simply two square wooden boxes, the inside one acting as a plunger, the outer box has a pipe coming up through the bottom of it, and it is filled with water; the box that acts as a plunger works down over the top of this pipe, the upward motion draws in air from two valves in the side near the top edge, and the downward stroke forces the air down the pipe. This system is found to be quite sufficient for keeping the mine well ventilated.

SLUICING OPERATIONS.

Beechworth.

There is very little mining now carried on in the district, and what little there is doing is principally sluicing; but the term sluicing in this district gives one very little idea of the large quantity of stuff that can be taken away with a good head of water. I visited the principal claim in the district belonging to Mr. Fletcher, a very old resident in the place. He has a head-race capable of carrying what he terms twelve heads of water, but these heads differ very materially from the sluice-head in New Zealand. What they term a sluice-head is a stream of water flowing from a box 6ft. long set on a level, having an aperture at the lower end 12in. wide and 1½in. high, with a board giving it a head or pressure of 6in.; this would be capable of discharging about 21 cubic feet per minute, or about one-third of our sluice-heads. The quantity that Mr. Fletcher uses, when the water is available, is about eight heads; the greatest pressure he has for working his ground is about 130ft., and the fall of his tail-race, which is paved with stones, is 2½in. to every 12ft. in length. The wages paid to the workmen employed in his claim are 7s. per day for Europeans and from 5s. to 6s. per day for Chinese. There is very little water sold on this field; the only water sold in this district to the miners is sold by the Beechworth Town Council, and that is only when there is a good supply in the reservoir. The price charged for a Beechworth head (21 cubic feet per minute) is from 37s. 6d. to 40s. per head per week of twelve hours per day, or, when the quantity is compared to our sluice-heads, it would be equal to 112s. 6d. to 120s. per head.

Before summarising the improvements in machinery employed in Victoria for working the mines and extracting the gold from the matrix, it will be as well to continue my observations on the mines in the Colony of New South Wales, and finally to summarise the various systems of mining machinery and processes employed in mining and extracting the different metals. I also propose to give a short description of the systems adopted in each of those colonies for conducting the mining surveys, as well as a few remarks on the general organization of the Mines Departments.

NEW SOUTH WALES.

The gold-saving appliances, such as crushing-batteries, quicksilver-tables, concentrators, and the mode of treating pyrites are not so complete in New South Wales as in Victoria. That is due in part, no doubt, to the small yield of gold inducing less attention to the subject. More attention is devoted to other minerals—namely, silver, copper, tin, coal, and diamonds; and, as far as its mineral wealth is concerned, New South Wales is much richer than Victoria; almost everywhere minerals exist. The coal fields are of immense extent; the vast lodes of copper, tin, and silver, together with large fields containing an abundance of stream tin, gives a stranger visiting the country an impression that its mineral wealth is almost inexhaustible. I therefore, in this colony, gave my principal attention to the working and methods of treating and extracting minerals other than gold.

TIN-MINING.

Emmaville and Vegetable Creek.

This is a district where large quantities of stream tin have been found, and where a number of miners are still employed. Tin was first discovered here in 1874, on a large flat through which Vegetable Creek flows. The claims were first taken up in such a form that each had a frontage to the creek running for a considerable distance back into the flat. The sinking was from 3ft. to 8ft., but after the shallow ground was worked out a lead was discovered about two miles further on in deep ground. I was informed that some of the claims that were at first taken up yielded as much as £200,000 worth of tin. But the principal portion of the shallow ground is now worked out, and attention is being directed to the deep leads, which are about 220ft. in depth, having from 3ft. to 5ft. of washdirt. Mr. Alfred Cadell and Mr. Flannery, two gentlemen interested in tin- and silver-mining in this district, accompanied me over the field, and gave me a deal of information and assistance, the former gentleman giving me a collection of valuable specimens and stones, which he had made from time to time. The tin found in the alluvial ground is of the purest quality, and the mode of extracting it is somewhat similar to that of box-sluicing auriferous dirt. Sluice-boxes with false bottoms are placed near some water hole or creek; the water is lifted by a small Californian pump into a tank at the head of the sluice-box, whence it flows from the tail of the boxes into the hole again. The greatest trouble to contend with here is to preserve the water, and not to allow any of it to run to waste.