

periodicals and publications upon the subject from friends who send them to me. They can make auriferous drift there, in some places where the value of the gold is a little over a pennyweight per cubic yard, pay dividend; besides, they have a much easier way of getting clear of the great difficulty which we have to contend with—namely, stones; they have all the machinery requisite for lifting stones, so that they can do by machinery what we can only do by manual labour: that is a great difference in their favour. I believe they have got a real insight into almost everything connected with gold-mining in America, which might be expected from the fact that America presents a much larger field for operations, as far as the extraction of silver and gold is concerned, than any other country in the world. In 1885 the total produce of the silver- and gold-mines in America was thirty-one millions and a half.

111. *Mr. Guinness.*] Dollars or pounds?—Pounds. In Germany, Austria, and Hungary the produce was two millions and three-quarters; in the Australian Colonies it was six millions and a half; in Russia, five millions and a half, that is, in round numbers. The yield in America is twelve times the quantity produced in Germany, Austria, and Hungary; six times the quantity produced by Russia; and five times greater than the produce of the whole of the Australasian Colonies. I think the best way of getting what would be the most valuable and reliable information would be to send from here some one well acquainted with the New Zealand goldfields, their requirements, the nature of the auriferous drifts, and the methods adopted for working them. The person or persons to go there for such a purpose as getting information upon everything connected with gold-mining in America should be well acquainted with the nature of the auriferous drifts and also the auriferous and argentiferous ores that are met with here. If he were an experienced man as well as being practically acquainted with the goldfields and the processes adopted in this colony he could obtain a great deal of information upon a variety of subjects connected with mining. He could see, for instance, the class of machinery used in America, and how everything is carried out in working mines upon a large scale. He would know exactly what would suit each particular mining locality in New Zealand. I am certain this would be most valuable information for the colony to obtain.

112. *The Chairman.*] And as to gold-saving apparatus, what is your opinion with regard to that? Do you think that much saving could be effected?—I think there is no doubt that a saving could be effected by means of the knowledge we would get from America. They get a much larger percentage of gold than we get. There is one thing I should remark as regards the method of sluicing in America. They adopt methods for saving gold in sluices which we do not use here, for the reason, it is said, that the water is too cold to use quicksilver. In America they use quicksilver in their sluice-boxes, and where these sluices are a great length as many as seventy flasks of quicksilver are used in one sluice. They have also different methods of paving their sluices and breaking up cemented gravel from that which is in use here.

113. Then you think that quicksilver might be used to greater advantage than it is at present?—Yes; I think more gold would be saved. Reliable information, as well as plans showing the different methods of working auriferous drifts, would be valuable to the colony and tend to further the development of the mining industry.

114. *Mr. Valentine.*] Have any experiments been made?—Not that I am aware of.

115. Do you know the working of the Kumara Sludge-channel? You do know, I presume, that it is a Government work? From any information you possess, do you think there has been a considerable amount of gold-loss in consequence of partial or imperfect sluicing?—I know that there is tremendous loss in sluicing, for there is a lot of gold in the stuff after it comes into the channel from private parties' sluice-boxes who are using the channel to get clear of their tailings.

116. What is the length of it?—About three-quarters of a mile.

117. That was not formerly thought to be the case; it is only recently that was discovered?—Only recently; the value of the gold saved in this channel averages about £80 per month.

118. Has that discovery been one of the effects of the school of mines?—No.

119. *The Chairman.*] Is it possible to test the apparatus used called "grizzlies" in connection with quicksilver at the Kumara Sludge-channel?—I am not sure that there is sufficient fall. You require fall to use the "grizzly;" unless there is sufficient fall the water and tailings cannot be led back into the sluices.

120. Will you explain what you mean by the term "grizzly"?—It means that there are iron bars forming a grating in the boxes of the main sluice. Underneath this grating there is an under-current box placed about 18in. beneath the bottom of the main sluice. This under-current box is placed at right angles to the main sluice, and conveys the water and fine material that falls through the grating on to large tables, which are from 20ft. to 30ft. in width and about 40ft. in length. The object of these tables is to spread out the sluiced material and allow it to go over the tables in a thin sheet, for it is well known that when there is a great depth of sand and gravel in a sluice-box there is a great loss in gold. After the material leaves the tables it is conveyed by a box into the main sluice again, and passes over a series of grizzlies and under-currents before it is finally deposited on the ground. The effect of the grizzlies being placed in the main sluice is to separate the boulders and coarse material from the fine, and allow the gold to have a better chance of being saved on the tables.

121. *Mr. Duncan.*] Is there anything on the table?—Some of them have great wooden bars, some iron rails, and some are pitched with stones.

122. *The Chairman.*] Do they use quicksilver?—Yes; they use quicksilver.

123. *Mr. Valentine.*] Have you any knowledge of the Switzer country?—Yes.

124. What do you call the deposits there?—Alluvial drifts.

125. Do you know whether there are any of these drifts in the banks going up the left side: are they auriferous; if so, could they be made payable? I am told they could be made to pay: that traces of gold are found there?—It is possible: that is a matter that can only be determined by prospecting. Very little will pay if you have a good face and plenty of water.