

necessary to send some one to the United States to know all about these roasting processes?—Yes; a person would have a better opportunity of seeing them carried out there upon a much larger scale than in any other place in the world. I think there are many different systems employed in America.

176. Do you not think that any man well acquainted with metallurgy would be acquainted with all the details of them?—I question that, for there are plenty of men who know metallurgy pretty well, yet, when they come here, are of little use; their theory may be all right, but they do not always put it successfully into practice.

177. That may be so, but I should not call such men metallurgists. You have told us about the reverberatory furnace, Bruckner cylinder, and other furnaces: do you not think that all the details of these are known to competent metallurgists?—Yes; every man has his own opinion, but you will scarcely find two men that have the same opinion on this subject. You may perhaps find two opinions which coincide, but you will not get every one to agree to which is best; each claim advantages for the particular furnace he has been accustomed to.

178. Can you give us any idea what the experience has been in America in reference to the various methods of roasting, or to what it tends?—Roasting is carried out there upon a very large scale; furnaces are largely used throughout America. It is found that they get better results more cheaply by the use of the Stetefeldt furnace; it is found to work more cheaply than the reverberatory furnace, for this reason: that there is less manual labour connected with the Stetefeldt; the stuff goes into a hopper at the top, and it is chloridized when it gets to the bottom. The reverberatory furnace, on the other hand, requires an amount of manual labour; and not only that, but it requires a certain amount of skilled labour in attendance upon it to know when the sulphides are properly roasted, and ready to go on to the next stage that is to convert the sulphides into sulphates and oxides of the metals.

179. Then you say that the Stetefeldt, and not the reverberatory, furnace is the most likely to succeed?—I do not give any opinion on that. I have never seen the Stetefeldt at work; I only state, from what I have read in the American papers, that the Stetefeldt is the most economical to work on a large scale, and cheaper than the reverberatory furnace.

180. *The Chairman.*] Why cheaper?—Because there is less manual labour required.

181. *Mr. Allen.*] Is it more costly to build?—Yes, it is more costly to build.

182. Then with regard to the Bruckner cylinder?—That is more expensive to work than any of the others.

183. Has it succeeded?—Not well: it is too costly: it is a very effective furnace, but it is too costly to work, and keep in proper repair.

184. Now, with regard to smelting processes, do you think that a man going to America would make himself acquainted with all the latest and best methods?—I say that a man who knew his business would come back with a very large amount of valuable information. But, if the man had no practical knowledge on these subjects, he would bring back very little.

185. Do you think that a man going to America would be allowed to see the latest processes at work?—I am certain of it. I find from correspondence from persons there that they are only too happy to show all they can to any one that comes there from a distance for the purpose of getting information. They perhaps would not show the people of the place, lest it should subject them at times to inconvenience. They might have particular reasons for objecting to persons going through the works. When I visited Sandhurst I was told that objection would be made to my seeing some of the mines. I was told when I wanted to visit Lansell's 180 Claim, Sandhurst, that there was not the slightest chance of my getting down. But I drove up to the manager's house, told him who I was, and the reasons for which I came there. He told me that he would be glad to show me anything that I wished to see. He said that he had been obliged to make the rule against visiting the mine to prevent people coming there who were sent round to get information for stock-exchange purposes.

186. Do you think that he would be allowed to go to a place where they were working tellurides; where they were working with copper ores?—There might be particular reasons in certain places why they would not allow you to see their work. There are secret works in every country, but, as a general rule, no objection is made, according to what I hear from my friends there; they are glad to give information to any person visiting their mines for the purpose of obtaining information.

187. Do you think that a man going there would get all the information that is to be got about the amalgamation processes in use there?—I think he would be able to gain a very large amount of knowledge about them.

188. Would he be able to see their electric processes at work?—I do not know whether the electric process is worked in America or not; but I have seen it in Melbourne.

189. Was it a success?—It was not tried on a large scale. I would like to see it tried on a larger scale before giving an opinion on that point.

190. Do you know that it has been tried on a large scale in Hungary?—I know it has been tried in Hungary; but I do not know whether it has been a great success. They speak highly of it. I know that it is one of the best methods of cleansing quicksilver. When examining this process in Melbourne I asked the agent about it, and he stated that I might put anything I liked into the quicksilver and this process would cleanse it. As an illustration, we got a handbasin and mixed up a lot of quicksilver with antimony and anti-friction grease. After this mixture had been thoroughly beaten together into a pulp the mercury had lost all affinity for gold; but, after placing the negative pole into quicksilver and the positive pole in the water directly above the surface of the quicksilver, you could see the black scum come boiling out, and the quicksilver became perfectly clean in a very short time.

191. I can tell you that it has been tried in Hungary with success?—As far as theoretical