technical knowledge on all subjects in connection with metals and minerals, and their extraction from the ores, and more especially the metallurgy of gold and silver. The establishment of these schools at the principal quartz-mining centres affords those who are employed in the mines an opportunity of attending the night classes; and men, in many instances, leave the districts they have been working in for years to go to places where schools are situated in order to avail themselves of the benefits to be derived from the technical teaching there given. It is, however, only in large mining centres where these schools will be well attended. Men following the occupation of miners can neither afford the time nor the money to leave off their work and study these subjects at a university in a large town, and, moreover, many of the students who attend the classes at the schools of mines would not attend classes at a university, even if they could afford the time and money. There is no doubt that the establishment of these schools in mining districts is one of the greatest benefits that ever has been conferred on the working classes, and they are highly appreciated by both young and old. Not only does one find young men in the prime of life studying at these schools, but in many cases men who have passed the prime of life, who have spent the best part of their life underground, are to be seen engaged at their studies, eagerly thirsting for a technical knowledge on subjects which they are fully acquainted with the practical working of.

THAMES SCHOOL OF MINES.

At the Thames School, last year, the average number of students was 105; of this number there were fifty-two registered students, and fifty-three students attending Saturday lectures. During the year there were twenty-one samples of ore tested, in parcels varying from 70lb. up to 2,940lb; the total aggregate weight of ore tested being 22,819lb., or 10 tons 3cwt. 3qr. nearly. The percentage of the assay-value obtained varied from 36·8 per cent. to 95·8 per cent., the average percentage obtained from the whole of the parcels being 78·3 per cent; the lowest percentage of the value recovered being from ore from the Great Barrier Island, containing ruby or antimonial silver, which would only yield up the bullion after chloridizing roasting, but the assay-value showed it to be of too low grade to pay for this being done. Of another parcel of ore from the Silver Queen Mine, Maratoto, only 40·8 per cent. of its value was recovered, the silver existing in the ore in the form of a telluride. According to assay the ore contained about 5oz. gold and 271oz. silver to the ton, of which 94·2 per cent. of gold was recovered, and only 15·4 per cent. of the silver. Experiments in the laboratory showed that 50 per cent. of the silver was volatilised at a bright-red heat in less than two hours.

Mr. Park has been also making sample assays of crushed ore at several batteries, the ore being taken from the splash through the grating at intervals of about every fifteen minutes, and put into a tub, and assay made from the collected ore. From the Alburnia Mine, 27 tons of general quartz was crushed at the Cambria Battery, having an assay-value of £33 4s. 6d. per ton, representing a total value of £897 1s. 6d. From the copper-plates bullion to the value of £30 0s. 7d. was recovered, and from the berdans £432 15s. 5d.; thus showing that 3·3 per cent. of the bullion was recovered from the plates, and 48·2 per cent. from the berdans, or a total saving of 51·5 per cent.

Assay samples were also taken from ore crushed at the Moanataiari Battery in the same manner as those from the Alburnia ore. The quantity of surface-dirt, or mullock, operated on was 700 tons, which gave an assay-value of 14s. 3d. per ton, making the assay-value of the ore £498 15s. The total value of bullion extracted was £103 0s. 7d., being only 20·6 per cent. of its assay-value. A test was likewise made from a sample of 400 tons of quartz and some picked stone, the general stone having an assay-value of £1 10s. 9d. per ton, or £615, and the picked stone £110 6s. 7d., making a total value of £725 6s. 7d. The value of bullion recovered was £374 5s. 11d., being 51·5 per cent of its assay-value. Taking the general quartz without the picked stone, the value of bullion recovered was £263 19s. 4d., or only 42·9 per cent. of its assay-value. A second test was made from the same battery from a parcel of 230 tons of general quartz, which had an assay-value of £1 7s. 9d. per ton, or £319 2s. 6d. The value of the bullion recovered was £163 2s. 10d., being 51·1 per cent. of the assay-value. Also, another test was made from 400 tons of surface-mullock, which had an assay-value of 10s. per ton, or £200, the value of the bullion recovered in this instance being £92 0s. 9d., or 46 per cent. of the assay-value.

Samples were also assayed from the Norfolk Battery, in which 20 tons of quartz from the North Star Mine was crushed, the assay-value of this quartz being £13 14s. 6d. per ton, or £274 10s. The value of the bullion recovered was £110 15s. 6d., being 40·3 per cent. of the assay-value.

It will be seen from this that there is a very large loss in bullion from the present method of extraction. Before these tests were made by Mr. Park the mill managers were confident they were saving at least 75 per cent. of the assay-value of the ore. The samples from the various batteries being taken every fifteen minutes and put into a tub, and when the whole of the parcel of quartz was crushed the tub was forwarded to the School of Mines, and there the material was thoroughly mixed and assay samples taken from this, which ought to give the average value of the ore very correctly. Now that the mill-men know what they are losing it will make them exceedingly careful to see if they can by any other method extract a larger percentage than has formerly been done.

The following is a report by James Park, F.G.S., the Instructor and Director of the Thames School, on the progress made for the year ending 31st March, 1893:—

"I have the honour to report that during the past year the most satisfactory progress has been made in all the branches of study and work undertaken at the school. The attendance has also been well maintained, the average number of individuals having been 105, and for the previous year 111. The large average attendance is a very gratifying circumstance, considering the severe depression which has prevailed at the Thames during the past two years. A very marked improvement has taken place in the work of many of the advanced students, and it is very pleasing