

VIII.—*A sketch of the plan of the Mining Academies of Freyberg and Schemnitz.*

BY JOHN HENRY VIVIAN, Esq.

MEMBER OF THE SOCIETY.

THE establishment of a mining academy in the county of Cornwall has ever been a favourite scheme of mine. I need not therefore dwell upon the satisfaction that I feel at the exertions which the Society is making to establish a chair for a Professor of Mineralogy and Geology; and I beg to communicate that, should the resolutions upon this subject be carried into effect, it is my intention to present to the museum the mineralogical collection which I formed at Freyberg, immediately under the eye of Werner. The following sketch of the plan of the academies on the continent, which I have had an opportunity of visiting, will probably, upon this occasion, be received by the Society with some degree of interest.

The academy at Freyberg, in the Ertzgebirge (*metalliferous mountains*) of Saxony, has been established about half a century. It is supported by the government of the country; the sovereign, as in the other continental states, deriving a considerable revenue in dues, &c. from the mines. Of the three professors belonging to it, two are well known in the scientific world; Mr. WERNER, who lectures on *mineralogy, geology, and the art of mining*. LAMPADIUS, professor of *chemistry, metallurgy, assaying, and analytical chemistry*. Mr. RUSSE lectures on *mathematics, physics, dialling, &c.*

There are likewise several drawing and writing masters. The students are recommended by the sovereign, and have free admission to the lectures: during the latter part of their residence at the academy, they receive a small stipend. The time allowed for their education is three years. The Board of Directors of the Mines, before whom there is a public examination at the end of every course, which lasts from the summer of each year to the Easter following, regulates the studies of the collegers according to the situations for which they are destined; those intended for the mining department are to attend the lectures on mineralogy, geology, the art of mining, dialling, mechanics, &c.; whilst those for the smelting department, apply themselves particularly to chemistry and metallurgy.

The mines being in the immediate vicinity

Academies of Freyberg and Schemnitz. 73

of the town of Freyberg, the students are expected to make frequent excursions underground, and to draw up a report of their observations. That they may become thoroughly acquainted with the practical part of mining, a *pitch* is usually allotted to each in a mine near the town, and the student is paid a somewhat higher price than is commonly given, for the work done. At the expiration of the three years, the student is recommended to a situation, if he has regularly passed his examinations, and conducted himself with propriety.

The lectures for the collegers are likewise open to strangers, on their making a moderate compensation for each course to the professor. Mr. Werner in particular had pupils from all the nations in Europe. At the time I studied there in 1804, there were Frenchmen, Spaniards, Poles, Prussians, Bavarians, and one Englishman, Mr. Chenevix. In addition to the public lectures, I had a private course with Mr. Werner, and shall ever feel gratified for the great attentions I received from him as well during my former residence at the academy, as at my late visit in 1815. In fact every one at Freyberg is anxious to forward the pursuits of strangers, and to give them all the information they may wish; the mines and works are always open to inspection, and every thing relating to them is admirably conducted; permission from Dresden is required to study at

the Academy, but it is readily obtained. There is a collection of models, and likewise one of minerals, belonging to the Academy; the latter of which will now be completed by the addition of Mr. Werner's private collection, for the purchase of which the government has lately made an arrangement.

The Mining Academy at Schemnitz, in Lower Hungary, was founded in the year 1760, under the auspices of Maria Theresa; it is supported by the Austrian government, being for the education of young men destined for the direction of mines and smelting works in any part of the Emperor's dominions. As these are very extensive, and as each board of direction of mining districts has the right of recommending several students, their number is much more considerable than at Freyberg. At the time I visited Schemnitz in May, 1815, they were said to amount to nearly two hundred; the period of their studies is likewise three years; but with this difference, that instead of confining themselves, as at Freyberg, to the sciences immediately connected with their future destination, they attend a course of lectures on each, and at the expiration of the three years, if they have passed their examinations, they declare for which line they intend to qualify themselves; if for the mining department, they are expected to reside six months on the mines in the neighbourhood of the town, to learn the practical part of mining,

dressing the ores, dialling, &c. ; or if for the smelting department, a residence at one of the smelting works is necessary ; they are expected also to go under-ground, at least once a week, during their residence at Schemnitz, in parties of five or six, to assist each other by their remarks.

The student, before he enters the Academy, is supposed to have some general knowledge of mining. The first year he attends the lectures of the professor of physics and mathematics, in which those parts which relate particularly to mining are detailed, as hydraulics, hydrostatics, mechanics, geometry, trigonometry, &c. ; this year may be dispensed with if the student from previous application can pass the examination. The second year is devoted to chemistry and metallurgy ; the third to geology and mining. Each course lasts five months, with one month vacation. In the lectures on geology, Werner's system is followed, as published by Reichehedz. Mr. Floring, the professor of chemistry, who has studied at Freyberg, has adopted the English system of Dr. Thomson. Mineralogy is treated of in the course on chemistry. I confess it appears to me too important a part in the education of a miner, to be passed over thus slightly.

The mineralogical collection, I must also observe, was very incomplete and carelessly arranged. In justice, however, to the professors, I must add that they had not been long at the

Academy, and that they observed that the collection had, from time to time, been stripped of its finest specimens for the embellishment of the cabinet at Vienna. Mr. Handstedn, the professor of geology and mining, who lately returned from a tour through Transylvania, shewed me some very fine specimens of native gold and of the ores of tellurium.

Amongst those who have been professors at the Schemnitz Academy since its establishment, the following have distinguished themselves by their writings:—Mr. Delius *on mining*; Scopoli *on smelting*; and Potzier *on chemistry*. The present professor Wilkins is said to be an excellent mathematician.

On my passing through the Hartz mountains in the autumn of the year 1815, I found that since I was there in 1804, a person had been appointed to lecture on mineralogy at Clausthal, which it was hoped would lead to an establishment of a mining academy.

In England, until the resolutions of the Royal Geological Society of Cornwall, no attempt has been made to establish a mining academy. It may be said that our government is not so materially interested in the mineral productions of the country as those of the continent, where all metals belong to the state; and the sovereign, in granting permission to search for them, reserves to himself the appointment of the principal officers who have the direction of the mines and works, as like-

Academies of Freyberg and Schemnitz. 77

wise the purchase of all the ores obtained ; but it is not to be denied that the metals contribute largely to the prosperity and welfare of a state, and it may be asserted with equal truth, that in this respect the kingdom of Great Britain in general, and the county of Cornwall in particular, are, by the bounty of nature, singularly favoured.