

Fallows, late astronomer at the Cape of Good Hope, Capt. Foster of the Royal Navy, M. Pons of Marlia, and the Abbé Grégoire.

Mr. Fallows is an example, and, in this country, happily, not a solitary example, of the influence which talents and character may have on the fortunes of an individual, under circumstances apparently the most untoward. He was born, July 4, 1789, at Cockermouth, in the county of Cumberland, and his early years were spent in following his father's occupation, that of a weaver, with no further time or opportunity for education than could be afforded by the ordinary intervals of labour. Fortunately, his father was himself a man of considerable information and studious habits, and devoted these leisure moments to the education of his child, who thus became early acquainted with the principles of arithmetic and geometry, subjects in which he chiefly delighted. When a mere boy, a mathematical book was his constant companion at the loom; and this taste was encouraged by the kindness of many persons in the vicinity, who supplied him with books, and such assistance in his studies as they were competent to give. His father having become parish clerk at the neighbouring church of Bridekirk, the extraordinary acquirements of the young mathematician became known to the Rev. Mr. Hervey, vicar of that parish; and by the advice and recommendation of this gentleman, Mr. Fallows was engaged as an assistant by Mr. Temple, at that time head-master of Plumland school. On the death of Mr. Temple in 1808, Mr. Hervey further exerted himself to obtain for Mr. Fallows the patronage of some gentlemen of fortune and interest, in order that he might be enabled to go to the university. In this purpose he was successful; and in 1809, Mr. Fallows commenced residence as a student of St. John's College, Cambridge.

Whatever difficulties might have previously embarrassed Mr. Fallows' career were now dissipated. At St. John's, honourably distinguished (perhaps above all other colleges) for attention to the education and interests of unfriended merit, he found every assistance which could be desired,—kind friends, most able instructors, and an unlimited power of consulting books. His progress was, accordingly, rapid and successful, though directed, as was to be expected, in the line of the older English geometers, with whom he was already familiar, rather than according to the continental mathematicians. In 1813, he proceeded bachelor of arts, and was third, Sir John Herschel being senior wrangler.

Shortly after taking his degree, as there was no fellowship open at St. John's to which Mr. Fallows was eligible, he removed to Benet College, as mathematical lecturer; but was gladly recalled to his own college in 1815, when a fellowship became vacant. Here he resided for some years; and when his Majesty's Government had resolved upon establishing an Observatory of the highest class at the Cape of Good Hope, Mr. Fallows was selected as the person best qualified to direct the future establishment.

The few months which intervened between the time of his ap-

pointment and his removal to the Cape, were spent by Mr. Fallows in the public and private observatories of this country, in the workshops of our most celebrated artists, in the calculation of special tables, and in devising the best and simplest means of making, registering, and reducing astronomical observations.

On the 1st Jan. 1821, he married Miss Mary Anne Hervey, eldest daughter of the Rev. H. A. Hervey, vicar of Bridekirk, and embarked on the 4th of May following. Mr. Fallows arrived at the Cape on the 12th of August, 1821.

His first undertaking was an approximate catalogue of 275 principal stars, published in the *Phil. Trans.* 1824. From the description of the instruments employed, it will be seen that they were of a very humble description, viz., a portable transit of only twenty inches focal length, and a very indifferent altitude and azimuth instrument by Ramsden, ill-divided, and unstable in its adjustments, being indeed originally constructed as an equatorial. It is probable that the length of time which must necessarily elapse between the design and completion of a first-rate Observatory, in a foreign station, was not fully taken into account, either by the Government or the astronomer; otherwise the temporary instruments would, doubtless, have been of a very different class. The plan of the Observatory was received by Mr. Fallows in the latter part of 1825, and he immediately proceeded to carry it into effect. A site was selected about three miles from Cape Town, and Mr. Fallows lived in a tent on the spot, to determine the lines of the building, and to superintend the workmen. The foundations were dug out before the clerk of the works arrived to relieve him from this task.

In the beginning of 1829, the transit and mural circle were fixed in their places, and we might now have anticipated a season of enjoyment for the Cape astronomer; but, for some cause hitherto unexplained, the circle, to which he had looked forward with pride and exultation, proved for a long time a source of bitter uneasiness. Some part of this must, doubtless, be attributed to the shattered state of the observer's health; but the fact, that "the index error of two opposite microscopes was ever variable in different parts of the instrument, while with three microscopes, at 120° distance from each other, or with the whole six, the index error was nearly constant," was sufficiently startling to harass a person of less sanguine and zealous temper. Finally, Mr. Fallows was of opinion that some permanent injury had been received by the circle and axis, from a fall which the package received whilst it was removing from the hold of the ship at the time of landing; but that the mean of the six microscopes might be fully depended upon; since high and low stars, when observed directly and by reflexion, gave the same position of the horizontal point. Before he had come to this conclusion, which seems to have been some time in the middle of 1830, sickness deprived him of the services of his assistant, Capt. Ronald; and Mr. Fallows was left, unaided, to do the best he might with a transit and mural

circle. He was relieved from this difficulty by the affection and intelligence of Mrs. Fallows, who offered to undertake the circle observations while he was engaged with the transit. A very little instruction sufficed to render her perfectly competent for this task; and the Cape astronomer had, like Hevelius, the pleasure of finding his best assistant in the partner of his affections. Some of his letters, written at this time, express a strong hope and confidence that he should at length be able to justify the high expectations which had been formed of the Observatory, and that his work would bear a comparison in accuracy, though not in extent, with that of any other establishment.

But the labours of the Observatory were too much for a constitution already much enfeebled by previous illness. He had suffered very severely from a *coup de soleil* soon after his arrival at the Cape, while fixing the small transit; and, besides some less serious complaints, experienced a dangerous attack of scarlet fever in the summer of 1830, from which he seems never to have fully recovered. In the beginning of 1831, his health was visibly impaired, but he could not be induced to leave the Observatory before the equinox. Towards the end of March, he became incapable of struggling any longer with the disease, and went to Simon's Town; but it was now too late, and he breathed his last on the 25th July, 1831, in the forty-third year of his age.

To those who were acquainted with Mr. Fallows, it is unnecessary to dwell upon the integrity and simplicity of his character, or the depth and clearness of his understanding: as an astronomer, he had few rivals. Perfectly acquainted with the practical and scientific departments of astronomy, he carried into the Observatory the same straightforward zeal and honesty which were the distinctive features of his private character; and if his life had been spared, would unquestionably have realised the most sanguine expectations of his friends and admirers.

Mr. Fallows did not leave his observations completely prepared for publication, but so nearly as to require very little additional labour. His wish was to have had them printed under his own eye, after they had been examined and approved of by competent judges in England; for which purpose, examined copies were transmitted by him to the Lords Commissioners of the Admiralty. They consist of about 3000 transit, and several hundred circle observations, with six microscopes, and some series with the invariable pendulum. The instrumental errors are ascertained, and the current reductions computed, so that there will be no difficulty in presenting the results, though not perhaps in the independent manner proposed by the observer. It is to be hoped that these observations and reductions will be speedily published, by the order of the founders and patrons of the Cape Observatory; and we are confident, that they will be found every way worthy of Mr. Fallows and of the country which committed that important and magnificent establishment to his charge.

But though the loss inflicted upon science is thus severe, your