Loock. Here he was fortunately situated, as, from his ac­quaintance with learned men, and from having free access to the university laboratory, he had opportunities of in­creasing his knowledge. At this place also he happily commenced the friendship which subsisted between him and Bergman. During his residence at this place, Prince Henry of Prussia, accompanied by the Duke of Sudermania, vi­sited Upsal, and chose this opportunity to see the acade­mical laboratory. Scheele was accordingly appointed by the university to exhibit to them some chemical experi­ments. This office he undertook, and showed some of the most curious processes in chemistry. The two princes asked him many questions, and expressed their approbation of the answers which he returned to them. The duke asked him of what country he was, and seemed to be much pleased when Scheele informed him that he was born at Stralsund. At their departure they told the professor, who was present, that they should esteem it a favour if he would permit the young man to have free access to the laboratory as often as he chose to make experiments.

In the year 1777 Scheele was appointed by the Medical College to be apothecary at Koping. It was at that place that he soon showed the world how great a man he was, and that no place or situation could confine his abilities. When he was at Stockholm he showed his acuteness as a chemist, as he discovered there the new and wonderful acid contained in the fluor spar. It has been confidently as­serted that Scheele was the first who discovered the nature of the aerial acid, and that whilst he was at Upsal he made many experiments to prove its properties. This circum­stance might probably have furnished Bergman with the means of treating this subject more fully. At the same place he began the series of excellent experiments on that remarkable mineral substance manganese ; from which in­vestigation he was lcd to make the very valuable and inte­resting discovery of oxymuriatic acid. At the same time he examined the properties of ponderous earth.

At Koping he finished his Dissertation on Air and Fire ; a work which the celebrated Bergman most warmly recom­mended in the friendly preface which he wrote for it. The theory which Scheele endeavours to prove in this treatise is, that fire consists of pure air and phlogiston. According to more recent opinions, if inflammable air be phlogiston, water is composed of these two principles. Of these opi­nions we may say, in the words of Cicero, “ Opiniones tam variæ sunt tamque inter se dissidentes ut alterum profecto fieri potest ut earum nulla, alterum certe non potest ut plus una vera sit.” The author’s merit in this work, exclusive of the encomiums of Bergman, was sufficient to obtain the approbation of the public; as the ingenuity displayed in treating so delicate a subject, and the many new and valu­able observations which are dispersed through the treatise, justly entitled the author to that fame which his book pro­cured him. It was spread abroad throughout every coun­try, became soon out of print, and was reprinted, and trans­lated into many languages. The English translation is en­riched with the notes of that accurate and truly philosophical genius Mr Richard Kirwan.

Scheele now diligently employed himself in contributing to the Transactions of the Academy at Stockholm. He first pointed out a new way to prepare the salt of benzoin. In the same year he discovered that arsenic, freed in a par­ticular manner from phlogiston, partakes of all the proper­ties of an acid, and has its peculiar affinities to other sub­stances.

In a Dissertation on Flint, Clay, and Alum, he clearly overturned Beaumé’s opinion of the identity of the siliceous and argillaceous earths. He published an Analysis of the Human Calculus. He showed also a mode of preparing *mercurius dulcis* in the humid way, and improved the pro­cess of making the powder of algaroth. He analysed the

mineral substance called molybdena, or flexible black lead. He discovered a beautiful green pigment. He showed us how to decompose the air of the atmosphere. He disco­vered that some neutral salts are decomposed by lime and by iron. He decomposed plumbago, or the common black lead. He observed, with peculiar ingenuity, an acid in milk, which decomposes acetated alkali ; and in his experiments on the sugar of milk, he discovered another acid, different in some respects from the above-mentioned acids and the common acid of sugar. He accomplished the decomposi­tion of tungsten, the component parts of which were before unknown, and found in it a peculiar metallic acid united to lime. He published an excellent dissertation on the dif­ferent sorts of ether. He found out an easy way to pre­serve vinegar for many years. His investigation of the colouring matter in Prussian blue, the means he employed to separate it, and his discovery that alkali, sal ammoniac, and charcoal, mixed together, will produce it, are strong marks of his penetration and genius. He found out a pe­culiar sweet matter in expressed oils after they have been boiled with litharge and water. He showed how the acid of lemons may be obtained in crystals. He found the white powder in rhubarb, which Model thought to be selenite, and which amounts to one seventh of the weight of the root, to be calcareous earth united to the acid of sorrel. This suggested to him the examination of the acid of sorrel. He precipitated acetate of lead with it, and decomposed the precipitate thus obtained by the vitriolic acid, and by this process he obtained the common acid of sugar ; and by slowly dropping a solution of fixed alkali into a solution of the acid of sugar, he regenerated the acid of sorrel. From his examination of the acids contained in fruits and berries, he found not one species of acid alone, viz. the acid of le­mon, but also another, which he denominated the malaceous or malic acid, from its being found in the greatest quantity in apples.

By the decomposition of Bergman’s new metal, siderite, he showed the truth of Meyer’s and Klaproth’s conjecture concerning it. He boiled the calx of siderite with alkali of tartar, and precipitated nitrate of mercury by the middle salt which he obtained by this operation. The calx of mer­cury which was precipitatcd was found to be united to the acid of phosphorus, so that he demonstrates that this calx was phosphoretted iron. He found also that the native Prussian blue contained the same acid. He discovered, by the same means, that the perlate acid, as it was called, was not an acid *sui generis,* but the phosphoric united to a small quantity of the mineral alkali. He suggested an improve­ment in the process for obtaining magnesia from Epsom salt ; and he advises the adding of an equal weight of common salt to the Epsom salt, so that an equal weight of Glauber’s salt may be obtained ; but this will not succeed unless du­ring the cold of winter. These are the valuable discove­ries of this great philosopher, which are to be found in the Transactions of the Royal Society at Stockholm. Most of his essays have been published in French by Madame Pi- cardet and M. Morveau of Dijon. Dr Beddoes also has made a very valuable present to his countrymen of an Eng­lish translation of a great part of Scheele’s dissertations, to which he has added some useful and ingenious notes.

Viewing Scheele as a philosopher, we must judge of him from his many and important discoveries. What concerns him as a man we are informed of by his friends, who affirm that his moral character was irreproachable. It was mat­ter of remark, that his chemical apparatus was neither neat nor convenient ; his laboratory was small and confined ; nor was he particular in regard to the vessels which he employ­ed in his experiments, so that we may justly wonder how such discoveries and such experiments could have been made. He understood none of the modem languages ex­cept the German and Swedish ; and he had not the advan-