

of Forbes after his death, in one of the magazines of the day. Like most of the foremost students of the University he was a member of the Speculative Society, and in later years, along with his friend Mr Robert Balfour, now deceased, wrote its history, a work of great research and interest.

Mr Cleghorn was called to the Scottish bar in 1839, and held successively the offices of Advocate-Depute, Registrar of Friendly Societies, and Sheriff of Argyle, which latest appointment he continued to hold until his death. He was unanimously elected in 1871 Legal Adviser of the Free Church of Scotland, of which he was an attached member and office-bearer. Mr Cleghorn's connection by marriage with the family of the late Lord Cockburn introduced him to a highly cultivated literary circle, in which he was well fitted, by his classical and scientific knowledge and wide range of literary study, to occupy a place. For very many years Mr Cleghorn devoted much time to the advancement of educational, benevolent, and religious objects, to all of which he was a most liberal contributor. The welfare of schools and colleges generally was always a source of interest to him, while the Edinburgh Academy, of which he was for many years a Director, and the University of his native city, were specially dear to him.

Wellington School, an institution for the reformation of young criminals, was founded by him, and to its support he largely contributed both means and personal labour.

Mr Cleghorn has left a name greatly esteemed, and will be remembered as a man of much culture and many acquirements, as well as a citizen of proved worth and of large hearted public spirit.

6. Biographical Notice of Henry Stephens. By Professor Maclagan.

Mr HENRY STEPHENS was in the Royal Society essentially the representative of the important science of agriculture, and has left behind him a reputation as an agriculturist not confined to Britain, for his works on agriculture have been translated into every European tongue, and are thoroughly appreciated abroad. He was born in July 1796, in Forfarshire, where he inherited the

estate of Balmadies. He seems, from his earliest youth, to have had an enthusiastic love for agriculture, and to have from the first regarded it not as a business to be conducted by empirical or routine rules, but as an art to be practised under the guidance of scientific principles. He intended that he should be a practical farmer, but he resolved that to fit himself for this he should make himself a well-educated gentleman. His motto seems all along to have been "thorough," and his guiding rules diligence and method. Nothing can illustrate this better than a manuscript volume which he left behind him, bearing on its title page, "A Course of Education, comprising Mathematics, Natural Philosophy, Natural History, Chemistry, and Agriculture. Dundee, 1815." The volume, which looks almost as if he intended it to be printed as a text-book for young agriculturists, was begun by him when he was 19. It is not original work, but consists of notes taken by him during his attendance on courses of instruction, of which he gives the following account in a formal preface to his manuscript volume:—

"The notes on mathematics, natural philosophy, and the outlines of chemistry, were taken at the lectures of Mr Duncan in the Dundee Academy, from 1st October 1809 to 1st August 1810, and from 1st October 1810 to 1st August 1811, which completed the session at the academy.

"The notes on chemistry were taken when attending the lectures of Dr Charles Hope in the University of Edinburgh, from 6th November 1812 to the 26th April 1813. Those on natural history, when attending the class of Mr Robert Jameson, in the same place and during the same period. In the same place the lectures on agriculture by Dr Andrew Coventry, commenced 5th January 1813 to 28th April of the same year; but during that period [I] attended his class twice a day, at 8 o'clock in the morning and at 3 o'clock in the afternoon."

This preface is a true index of the character of the man, even as he was known in his old age—complete methodicity, unsparing energy, and perfect precision in everything.

Stephens had, by theoretical preparation, made ready for cultivating his own estate, but he felt the necessity for practical study also, and therefore he placed himself, with a view to learning his work practically, with one of the largest and most skilful agricul-

turists in the county of Berwick, which had then the repute of being the best farmed district of Scotland. On this farm—Whit-some Hill—he remained for three years, engaging, as he himself records, “in every sphere of work which the ploughman, the shepherd, and the field-worker must perform in the field, or the steward or cattleman at the stading;” even in the dairy and poultry-house part of his time was spent; and all this he undertook “not of necessity, but voluntarily, and with cheerfulness, in the determination of acquiring a thorough practical knowledge of his profession.”

Thus armed, he was prepared to encounter the work of cultivating a part of his own estate, and he soon saw that to do this satisfactorily a considerable expenditure of money was called for; and this was done, to the effect of raising the value of the farm which he personally worked, from L.150 to L.400 a year. But evil days were in store for him. By the failure of an Indian house in which his money was invested, and just at the time when he had spent much on improving his property, he was straitened in his means, and he had to bethink himself of other ways of carrying out his life's object of being an agriculturist. It was at this time, when he was under the cloud of misfortune, that an accident occurred which laid the foundation for his reputation as an agricultural author. He was travelling in the coach from Dundee to Edinburgh when he encountered, as travelling companion, the eminent founder of the great publishing-house of William Blackwood and Sons. The sagacious William Blackwood was too acute not to perceive that in his young travelling companion he had found a man thoroughly versed in the science of agriculture. He shortly after called Stephens to his aid in conducting the *Journal of Agriculture*, and thereby was commenced a literary connection with the Blackwoods, which has extended even to a third generation. It was through them that he gave to the agricultural world his “*Book of the Farm*,” the first edition of which was published in 1842, and a second edition in 1871—the manuscript of which,—almost a complete re-writing of the original edition,—was worked up with the same precision, attention to detail, and neatness of penmanship, which characterised the “*Course of Education*” of 1815. His other works were—in conjunction with Mr G. H.

Slight, "The Book of Farm Implements and Machines;" in conjunction with Mr R. Scott Brown, the "Book of Farm Buildings;" in conjunction with Dr Seller, "Physiology at the Farm;" the "Manual of Practical Draining;" the "Yester Deep Land Culture;" and the "Catechism of Practical Agriculture."

He was an original and active member of the Meteorological Society of Scotland, and, although not writing much on the subject, he was in constant communication with the Secretary of the Society, especially in giving advice and assistance in all questions of meteorological science which had a special bearing on agriculture.

Mr Stephens, for many years previous to his death, was in the habit of repairing annually for the recruitment of his health to Homburg, and, in the course of his various visits to Germany, visited all the more celebrated vine growing districts on the Rhine. He carried his agricultural spirit with him in all these trips, noting all the processes of vine cultivation, even to its minutest details, and bringing back with him an ever increasing appreciation of all the best vintages of the Rhine, of which he always possessed a modest but select store, with which he delighted to refresh any friend visiting him at Redbraes, whom he thought capable of fully estimating his favourite wines. He had, however, even better entertainment for his visitors in his conversation, which was to the last full of good nature, with a large spice of "pawky" humour, sometimes in his later years a little prolix, but always yielding something in the way of anecdote or scientific—especially agricultural—observation worth listening to. For many years he had been made aware that he had a certain amount of organic change of structure in the aortic orifice of the heart; but this made no progress, and, so far as it was concerned, he might have prolonged his days. His death, however, was ultimately due to accident. It is remarkable that he was three times the subject of poisoning. He was one of the first of several instances which have occurred of poisoning by the flesh of American partridges, and his case was graphically narrated by his then medical attendant and friend, the late Dr Burt. He, on another occasion, suffered a good deal by the inhalation of coal gas which had escaped in his bedroom during the night, but from this he soon got well. It was, however, a repetition of this accident which ultimately led to his death. On

the night or early morning of 21st June 1874 he had, as he thought, extinguished the gas in his small bachelor bedroom, but unfortunately had left the stop-cock open, and it was his not making any movement in the morning that attracted the notice of the servants; one of them entering his room found him insensible, in an atmosphere strongly charged with gas, and, seeing at once what had happened, sagaciously opened the window, and got him to swallow some stimulant. His medical attendants succeeded in rousing him from his comatose state, and he seemed in the fair way of recovery, but a low congestive inflammation of the lungs supervened, and proved fatal on the 4th of July.

7. Biographical Notice of Christopher Hansteen. By
Alexander Buchan, Esq.

CHRISTOPHER HANSTEEN was born at Christiania on the 26th of September 1784. In 1802 he entered the University of Copenhagen as a student of law, which, however, he soon abandoned for what was to him the more congenial study of mathematics. He became mathematical tutor in the Gymnasium of Fredericksburg, in the Island of Zealand, in 1806, and about the same time he gained the prize which had been offered by the Royal Society of Sciences of Copenhagen for the best essay on terrestrial magnetism. Shortly thereafter, viz., in 1814, he was appointed to the chair of astronomy in the University of Christiania, which had recently been founded by Frederick VI. of Norway.

He continued to prosecute his researches into terrestrial magnetism with ardour and success, the results of which appeared in his great work, entitled “*Untersuchungen über den Magnetismus der Erde*,” which was published in 1819 by the liberality of the King of Norway. The work was illustrated with an atlas of maps, and besides containing the fullest and best collection of observations on terrestrial magnetism which had then appeared, it was remarkable for great breadth of treatment and sound philosophical generalisations.

In continuing the prosecution of his physical researches, he made a journey into Siberia, accompanied by Ermann and Due, the expenses of the expedition being defrayed by the Norwegian