A shrewd lawyer, an effective speaker for a popular audience, keen in his aims, fertile in resources for attaining them, he rapidly achieved that local notoriety which some slight change of circumstance and a higher ambition might perhaps have developed into fame. But he was content with that pre-eminence which he quite irresistibly won in his own surroundings, with the admiration of some and the respect of all. His busy professional and official life left him little leisure to cultivate literature and science, much as he, from a popular point of view, was able to appreciate both, though he recoiled somewhat from the audacities of modern thought. Many years ago he contributed to the eight edition of the Encyclopedia Britannica an article on "Master and Servant," a short treatise, clearly and vigorously written, with reliable and sufficient information upon the law of that important subject as it then stood. Whenever the cause of morality and religion seemed to invite his services, Maurice Lothian stood forth as an energetic and impressive lay preacher. In that connection one is apt to picture to one's self that fine head and presence which we all remember.

For many years he was one of the leading directors of an institution which, among other things, aims at popularising some of the results of scientific enquiry. As a vice-president of the Philosophical Institution, Maurice Lothian will be long remembered. We desire that as a Fellow of the Royal Society of Edinburgh he may not be forgotten.

Mungo Ponton, W.S.

(*From materials chiefly supplied by Mrs Ponton.*)

Mungo Ponton was born at Balgreen, near Edinburgh, in the year 1801. He was educated for the legal profession, and, in due course, became a Writer to the Signet. He was one of the founders of the National Bank of Scotland, and it was in his office that the plans were matured for the establishment of that institution. He held the office of legal adviser to the Bank, and subsequently that of secretary. The strain of the double duties thus imposed on him proved too much for his strength, and a serious attack of illness compelled him to retire from active life while yet comparatively a young man. Since that time he continued more or less of an invalid, but his

intensely active mind found congenial occupation in scientific and literary pursuits. He discovered the peculiar effect of light on gelatine when treated with the bichromate of potash, which was afterwards practically applied in the autotype process. Indeed, it is upon the sensitiveness of this salt to light, under certain conditions, that all the processes of permanent printing of the present day are based; and this discovery of his consequently marks the commencement of an era in photography, and renders his name as closely connected with the history of that art as are those of Niépce, Daguerre, and Talbot. It was in 1839—the very year in which the wonderful process of Daguerre was announced to the world—that Mungo Ponton called attention to bichromate of potash as a photographic agent, and described a process—the foundation of every subsequent permanent printing process—whereby, through that agent, durable impressions on paper might be produced. This discovery, which had been first announced to the Scottish Society of Arts on 29th May 1839, was given to the world in the Edinburgh New Philosophical Journal, vol. xxvii., 1839, under the title, "Notice of a Cheap and Simple Method of Preparing Paper for Photographic Drawing."

In December 1838, he obtained the Honorary Silver Medal of the Society of Arts of Scotland, "for the ingenuity displayed by him in the Model and Description of his Improved Electric Telegraph; read and exhibited 10th January and 20th June 1838, when Mr Ponton presented his elegant model to the Society, to be placed in their Museum."

His inventive turn of mind led him to take a great interest in the proceedings of the Scottish Society of Arts. He was admitted a Fellow of that Society in 1833, and shortly afterwards was made Foreign Secretary. He was elected their Vice-President in 1837, and again in 1844. He also acted for some time as editor of their Transactions. His first scientific paper, "On a Method of increasing the Adhesion of the Wheels of Locomotives to the Rails" was communicated to that Society in 1837.

He was the first who employed the photographic method for registering automatically the fluctuations in thermometers and other instruments, and for this invention he received also the Silver Medal of the same Society in 1845.

On the 20th of January 1834, he was elected a Fellow of the Royal Society of Edinburgh, and in December preceding he contributed a paper to our Proceedings (vol. i. p. 31), "On a New Species of Coloured Fringes developed between certain pieces of Plate-Glass, exhibiting a new Variety of Polarisation, and a peculiar Property which renders them available for the purposes of Micrometry." The author found that the fringes presented the appearance of three rectilinear bands, each consisting of black, white, and coloured stripes, but the central band was afterwards found to be composed of two united into one. There is thus a band for each of the four surfaces of the plates, and these bands possess a property which he thought might be available for micrometry. When the surfaces of the plates are parallel, two of the bands are united into one at the centre; but if a film be introduced between the plates, so as to cause them slightly to diverge, the two bands in the centre will be separated, and move laterally from each other, still preserving parallelism. A film, $\frac{1}{500}$ of an inch in thickness, causes the central bands to separate to the distance of an inch, so that every $\frac{1}{20}$ of an inch of separation is equivalent to $\frac{1}{10,000}$ of an inch in thickness.

On the 16th of January 1837, he read a paper to our Society on the condition of the earth, as it is first described in the Mosaic account of the creation. In this paper, he held that in a philological point of view, the most correct translation of the words rendered "without form and void," is *immeasurable and imponderable*. He seemed to lean to the opinion that the strata of the earth containing organic remains were formed during the very epoch embraced in the Mosaic narrative, and that the primitive condition of the earth was properly gaseous. In this connection, it may be mentioned, that his theoretical knowledge of music was uncommon, and that he arranged to music a metrical translation of the Psalms from the original Hebrew.

Having proposed the micrometer above described, Mr Ponton subsequently devised a photometer, which he described in a paper read to this Society on the 14th of March 1856, and published in our Transactions (vol. xxi. p. 363). The principle of this instrument consisted in comparing lights of different intensities by judging of the relative brilliancies of two definite surfaces when illuminated from two sources of light to be compared, care being

taken to have the illumination homogeneous. This condition was secured by causing the light from each source to pass through a combination of blue glass and blue paper steeped in a solution of sulphate of copper. This combination of glass and paper was enclosed in two tubes. If the apertures were equal, the blue spots seen on admission of a source of light were exactly of the same tint and intensity; but if one of the apertures were a little smaller, one spot not only seemed darker, but of a slight difference of colour. This peculiarity, when combined with a definite modification of the aperture of the tube next the source of light to be compared, enabled the observer to determine gradations of light with fully more exactitude than the method of equal shadows.

Mr Ponton was much occupied with the laws of chromatic dispersion, and read papers on that subject at the meetings of the British Association held in 1859 and 1860. At the latter meeting he also read a paper "On the Laws of the Wave-Lengths corresponding to certain points in the Solar Spectrum." Indeed, it is a remarkable circumstance, that at the time of his death, notwithstanding his advanced age, he was engaged in constructing an instrument for making apparent to the eye the different lengths of the waves of light emanating from two differently coloured media.

In addition to the scientific papers enumerated, he wrote several treatises. His most important work is entitled "The Beginning, its When and its How."

He endured his protracted affliction with exemplary patience, and endeared himself to all who knew him by his cheerfulness and thorough kindness of disposition.

It was on the 3d of August 1880 that Mungo Ponton, who will ever be remembered along with Daguerre and Fox Talbot, as one of the fathers of photography, passed away.

Thomas Knox. By the Hon. Lord Shand.

Mr Thomas Knox was born at Greenlaw in Berwickshire in 1818. At an early age he left his father's house and came to Edinburgh, where he was apprenticed as a draper. Soon after having completed his apprenticeship he went to Dundee, where he remained for some time as an assistant in an extensive warehouse. It was there he