how he had obtained accurate adjustment in his own case. In one of these letters he mentioned that in the course of forty-five years he had possessed about fifteen achromatic telescopes from 2½ in. up to 7 in.; the object of the letter was to explain how the definition of a fine mirror could be made equal to that of a fine achromatic. He was elected a Fellow of the Society on December 9, 1864.

Frederic Charles Green was born at Bolton, and educated at Bolton and Birkenhead schools. He took the greatest interest in seamanship and nautical matters, both practical and theoretical; and all the time that he could spare from his business of bleaching cotton goods, he devoted to the working of a small sail-boat of his own, and to studying such questions as the law of storms, methods of observing at sea, &c., and he occasionally wrote to the nautical papers on these subjects. To put his knowledge to a practical test, he passed the Board of Trade Examination. It was his great endeavour to assist mates and others engaged in practical seamanship in obtaining the requisite knowledge of the theoretical part of the subject. He was not thirty years of age when he died, of consumption, at the Isle of Man, where he had gone for the sake of his health. He was elected a Fellow of the Society on January 12, 1883.

Sir Henry Drury Harness was a son of John Harness, M.D., Commissioner of the Transport Board, and was born in the year 1804. He was educated at the Royal Military Academy, Woolwich. It was a time of reaction in military affairs, and he felt the effects of this in having to suffer a delay of two years in obtaining his commission. He employed this interval in making an excursion to Mexico, where the silver mines were then attracting the attention of English adventurers. He was appointed second lieutenant in the Royal Engineers, and his first service was at Bermuda, under General Blashard. In 1832 he was made first lieutenant. He returned to England in 1834, and was appointed an Instructor of Fortification at the Royal Military Academy, Woolwich. At this time he laid the foundations of those papers which were afterwards expanded to form a textbook of Fortification for that school. In 1840 he went to the Engineer School at Chatham, as Instructor in Surveying. At Woolwich and at Chatham he attracted his pupils, both to himself and to the subject of study, by his simple winning manner, and by his patient disposition. He became second captain in 1843. For a short time in 1844 he was Professor of Fortification at the Royal Military Academy, Woolwich. In 1845 he accepted the office of Inspector of Welsh Roads, which was established at that time, in consequence of the change from the system of maintaining them by turnpikes to that of county rates. At this time, the manner of dealing with the new railways became a subject of difficulty to the Board of Trade, and a separate Commission was appointed, of
which Captain Harness was one of the two Secretaries. It was subsequently merged in the Board of Trade, and he became sole Secretary.

During this time the railway system was developing with great rapidity, and he was therefore brought into contact with all the principal railway engineers of the day. Independently of these duties, he was at the time also acting as arbitrator between the Post Office and the railway companies, a responsible and difficult service, the subject of the arbitration being the remuneration to be paid to the railway companies for the conveyance of the mails. He was next called upon to undertake the duty of reforming the Royal Mint, on the basis of the report of a Royal Commission, which had been appointed to inquire into its constitution and management. The Master of the Mint at that time (1850) was a political officer, whose responsibilities were limited to his Parliamentary duties. Captain Harness was appointed Deputy-Master, and became the responsible head of the department. The mechanical operations connected with the production of coin were then directed and controlled by a quasi-corporation of melters, assayers, and moneyers, who contracted with the Deputy-Master for the execution of the coinage at certain prices; and the task assigned to Captain Harness was to convert this corporation into a Government department. This he successfully accomplished, and he had been virtually appointed Master of the Mint, when, it being considered desirable that this office should be held by an eminent scientific man, his nomination was rescinded, and the appointment given to Sir John Herschel.

He worked loyally under his new chief till the reforms were completed, when he resigned. The Governorship of New Zealand was then offered to him, but he declined it. After this he went as a Commissioner of Public Works to Ireland, and there he remained two years. He returned to England in 1855, to take the position of head of the fortification branch in the office of the Inspector-General of Fortifications, and he held this post during the latter part of the Crimean war. He was then appointed to the command of the Royal Engineers at Malta; but he had not been there long when the mutiny in India broke out, and he was offered the command of the body of Royal Engineers which was to form part of the force under Lord Clyde, and this offer he at once accepted. He had been appointed first captain in 1847, brevet-major in 1854, lieutenant-colonel in 1855. He took part in the operations at Cawnpore against the Gwalior contingent, the siege and capture of Lucknow, and the subsequent engagements in Rohilkund and Oudh. He distinguished himself by personal bravery in the field; and for his services in India he was several times mentioned in despatches. He was also nominated a Companion of the Order of the Bath, and received the medal and clasps.

On his return from India he was appointed, in 1860, the head of what is now the School of Military Engineering at
Chatham; and under his direction the whole establishment was rearranged in a form more suited to modern military science. In 1866 the cattle plague was giving much anxiety and trouble to the Privy Council; a separate department was created for a time to undertake all that the new Orders in Council required, and General Harness was placed at the head of it, and thus found himself the virtual dictator of the cattle trade of the country. He became major-general in 1868, and in 1877 he was appointed a colonel-commandant, Royal Engineers, and promoted to the rank of lieutenant-general in the army, after which he was placed on the retired list as a general. He became a K.C.B. in 1873. The last duty he undertook was to be President of a Committee on Siege Operations.

He was entrusted by the Ordnance authorities with the editing of a Course of Mathematics for the Royal Military Academy, which was published in 1853, and was till lately used there as a text-book. The late Dr. Peter Barlow, who was his colleague at Woolwich, and with whom he kept up a close friendship afterwards, gave him great assistance in the preparation of this work. His life was one of constant work, but the mere record of his services gives no just idea of the influence he exerted upon those with whom he was brought in contact during his long career.

He married, in 1828, Caroline, daughter of Mr. Thomas Edmunds, of Cowbridge, Glamorganshire; and died on February 10, 1883, at Barton End, Headington, Oxford. He was elected a Fellow of this Society on December 15, 1839.

J. W. L. G.

Julius Page was the only son of Richard Page, Esq., and in early life was associated in business with his father, who was engaged in the Stock Exchange, and was a frequent writer in the Times on the currency, under the name of Daniel Hardcastle. In 1834 Julius Page entered the house of Messrs. Baring Brothers, and remained with them as a valued and much respected clerk until failing health compelled his retirement in 1869. He married in 1834, and had one child, a daughter, who survives him. He died at Greenwich on August 6, 1883, in the 83rd year of his age.

Mr. Page was a member of the old Mathematical Society, and became a Fellow of the Royal Astronomical Society when the former Society was merged in it in 1845. Mr. Page occupied himself for many years with conic sections, treated algebraically, but not by the methods of analytical geometry, and he always took great interest in the solution of problems connected with this subject. He was the last surviving member of the old Mathematical Society, who was a true and characteristic representative of its methods and objects as they were in its best days. In the Monthly Notices for 1878 (vol. xxxviii. pp. 145-147), in the obituary notice of Dr. Bowerbank, there was given an account by Mr. Page of the Society as he remembered it. He there states that