

In 1896 he became President of the Entomological Society of London, and in 1910 he delivered the Herbert Spencer lecture at Oxford on "Evolution, Darwinian and Spencerian."

Professor Meldola's contributions to science embrace numerous papers on chemical and biological subjects, besides some independent works, among which his lectures on the chemistry of photography may be mentioned, in which the action of light on a haloid salt of silver is attributed to an oxidation. In 1878 the announcement of Dr. Henry Draper's discovery of oxygen in the sun led Meldola to publish two papers "On a Cause for the Appearance of Bright Lines in the Solar Spectrum," and on "Oxygen in the Sun." It does not appear that he published any other papers on astronomy.

Meldola occupied a unique position from "the diverse interests that had appealed throughout his life to his many-sided intellect." He was thus brought into contact with many men of eminence in various branches of science, and his wise and sensible advice was sought after. Indeed, one of the conspicuous features of Meldola's character was a rare common sense, which does not always accompany high scientific ability. At Finsbury he was "invaluable to his colleagues as a wise adviser, and a steady, constant, and loyal colleague." By nature he was a most amiable man, modest and undemonstrative in demeanour, clear in his judgment, and full of tact.

At the outbreak of the war Meldola was appointed chairman of the Advisory Council to the Government on the British Dyes Company; and he took a very active part in researches for the production in this country of optical and other glasses.

Professor Meldola was elected a Fellow of the Royal Society in 1886, and in 1913 he was awarded the Davy Medal. He received honorary degrees of D.Sc. from Oxford and LL.D. from St. Andrews. For two years he was Examiner for the Natural Sciences Tripos at Cambridge. In 1897 he received the Jubilee Medal from the Queen.

Professor Meldola died quite suddenly on 1915 November 16. A remarkable meeting of the Maccabean Society, of which he had been President since 1911, was held on December 15, which was presided over by Lord Reading and attended by several eminent men of science, when addresses were delivered in tribute to the great scientific work he accomplished in his life.

He was elected a Fellow of the Society 1877 March 9.

E. B. K.

WILLIAM HENRY STANLEY MONCK was born on 1839 April 21. He was the third son of the Rev. Thomas Stanley Monck, Rector of Innistiogue, County Kilkenny, and was grand-nephew of the first Lord Monck. Except for the help of tutors for a short time at his father's house, he seems to have been to a great extent self-educated, but notwithstanding this initial educational disadvantage he had a distinguished career in Trinity College, Dublin. There

he obtained first place in the University science scholarship examination in 1861. Later in the same year he won the first senior moderatorship and gold medal in ethics and logics. He also won the Wray Prize in metaphysics, and in the following year the Elrington Theological Prize was awarded to him for an essay on the subject, “‘Canst thou by searching find out God? Canst thou find out the Almighty unto perfection’ (Job xi. 7): to be discussed with reference to the limits of religious knowledge.” In 1864 he took out his divinity testimonium, being placed in the first class at the final divinity examination, and won the first theological exhibition. He obtained fellowship prizes at the examinations of 1867 and 1868, but failed to win a fellowship. In 1878 he was appointed Professor of Moral Philosophy, a post which he held until 1882. He was the author of a number of works on logics and metaphysics, including *Space and Vision*, *An Introduction to the Critical Philosophy*, *An Introduction to Logic*, and *Sir William Hamilton* in English Philosophers Series.

In 1875 he was called to the Bar, and subsequently became Chief Registrar in the Bankruptcy Division of the High Court of Ireland, a post which he held for many years.

Monck was well known as an original writer on astronomical subjects, his contributions being always marked by sound reasoning, good sense, and moderation. A collection of his articles, which had for the most part appeared in *Popular Astronomy*, was published in book form in 1899, under the title *An Introduction to Stellar Astronomy*. He also contributed a number of letters to *The Observatory* magazine, dealing chiefly with the maintenance of the Sun’s heat, historical eclipses, and chronology generally. He also wrote frequently for *The English Mechanic* and other papers. In 1890 he took an active part in the foundation of the British Astronomical Association. He was a member of the first Council elected by that association, and contributed many interesting and important papers to its Journal.

In 1892, in the *Publications of the Astronomical Society of the Pacific*, vol. iv. p. 98, he drew attention to the relation existing between the proper motions of stars and their spectral types. In the following year he dealt with the subject again in *Astronomy and Astrophysics*, vols. xi. and xii., where he showed that stars of Type II. have on the average larger proper motions than those of Type I. The importance of this discovery, corroborated as it has been by the later researches of Kapteyn, Dyson, and others, has been recognised by Professor Eddington in his book on *Stellar Movements and the Structure of the Universe*. In 1898 another paper on this subject from his pen appeared in *The Astrophysical Journal*, vol. viii. p. 28. Later he returned once more to the subject in the *Publications of A.S.P.*, vol. ix. p. 123; and from a discussion of the Dunsink Catalogue of 717 stars (mostly with large proper motions) and the Pulkova Catalogue of stars having an annual motion in Declination of over  $0''.1$ , he demonstrated that the earlier types of stars are endowed with a smaller proper

motion than the later. In this paper he discussed the relative frequency with which stars of different types occur in space, and was led to the interesting conclusion that, although the Sirian stars in the Draper Catalogue exceed in numbers the Capellan stars in the proportion of about  $2\frac{1}{2}$  to 1, yet the latter are really the more numerous, and that their apparent numerical inferiority is a delusive appearance arising from their smaller luminosity; and went on to point out the importance of keeping this fact in view in speculations relative to the structure of the Galaxy, where in consequence of distance the apparent preponderance of Sirian stars may be due to the fact that they still remain distinctly visible when the light of their Capellan companions is too faint to enable them to be observed separately.

The General Index to the *Publications of A.S.P.* contains references to a number of interesting and suggestive articles by Monck on "The Sun's Motion in Space," "The Radiant Points of Meteors," and other subjects, which are marked by the critical acumen, close reasoning, and originality which distinguish all his work.

He was quiet and reserved in manner, living a rather retired life amongst his books. He had also a considerable reputation as a chess-player. He died on 1915 June 24, leaving no children. His widow, who was daughter of Mr. Tobias Peyton, of the County Roscommon, survived him only a few months.

He was elected a Fellow of the Society 1886 April 9.

A. A. R.

SIR ANDREW NOBLE was born at Greenock on 1831 September 13, and was educated at the Edinburgh Academy and the Royal Military Academy, Woolwich. He took special interest in the science of gunnery, and joined the Royal Artillery when 17 years of age. Rapid promotion followed, and he became a captain in 1855. For a short time he was associated with Sir Edward Sabine on the magnetic survey at the Cape, and in 1857 became secretary of the Royal Artillery Institution. In 1859 he was Assistant Inspector of Artillery, and about this time was appointed member of several important Government Committees dealing with ordnance and explosives. A year later, while continuing to take an active part in the work of these committees, he joined the great works at Elswick as director of the ordnance department. In conjunction with Lord Armstrong he there carried out a multitude of investigations of first-rate importance. Among his inventions was a "chronoscope" which made it possible to measure a millionth of a second with ease, and this instrument was effectively employed in connection with problems relating to the passage of a shell from a state of rest to the mouth of a gun. During many years he also collaborated in important researches on explosives with Sir Frederick Abel and Sir James Dewar. Eventually he became Chairman and Managing Director of the Elswick firm.