

conveyed to Flammarion, *regium donum*, the beautiful estate and chateau at Juvisy, a few miles south of Paris, where he has since made his home. Here he installed and equipped a magnificent astronomical observatory, to which in later years he added a meteorological and climatological station which is under partial subvention from the French Ministry of Agriculture,—the only climatological station in France, as Flammarion himself boasted, established in direct connexion with the physical study of the sun.

At Juvisy, in the most charming surroundings, the weather is studied in extraordinarily minute detail. The astronomical observatory is thrown open to the eager student of the sky, and competent amateur observers are encouraged to undertake serious observational study there,—perfect instrumental equipment combining very happily with a perfect position, deep in the wooded country and yet within sight of Paris, whose upstanding wonders, the Eiffel Tower and the domes of Les Invalides and the Panthéon, are visible from the observatory terrace.

It was my privilege to visit M. and Mme. Flammarion at Juvisy in the summer of 1914, just before the outbreak of War, and the memory of that experience will not readily be effaced. Conversationally, M. Flammarion was a man of few words, a characteristic not uncommon among very prolific and highly imaginative writers. During a conference of French-speaking astronomical societies which lasted three whole days he rarely joined in the debates, notwithstanding that the subjects discussed were nearest his heart, and that none was present better qualified to deal with them. Once in Flammarion's presence it was obvious that there must be no bandying of empty compliments; no presumption upon a short acquaintance; no departure from the utmost gravity; no congratulations upon good fortune, be they ever so sincere and free from envy.

It must have been a strange scene as the leonine Flammarion, gravid with thought, conducted us round his beautiful and artistic home; through the inscribed monumental gateway opening out of the seventh of the great national roads of France; along corridors with the names of great astronomers and philosophers in ornamental writing on the friezes, and into rooms with the signs of the zodiac and other literary and scientific emblems brilliantly emblazoned on the ceilings or carved on the fittings; introducing us unostentatiously to his treasures with a minimum of words and much less than the usual amount of gesture. Probably to another visitor silence might have been more impressive than actual words, but to me, familiar with that brilliant literary style and fecund imagination which never failed in any of his works, Flammarion's grave taciturnity and his deceptive air of languid indifference were distinctly disappointing, offering great contrast to the eager vivacity of Mme. Flammarion. Subsequent private correspondence with Flammarion has demonstrated the imperfect justice of those impressions, revealing a warm and sympathetic nature which a brief acquaintance refused to discover in him personally.

Whilst Flammarion was a man of many activities, the facts of his astronomical life are few and simple. Born in 1842, his first acquaintance with astronomy dated back to the annular eclipse of the sun on October 9,

1847. At fifteen years of age he was apprenticed to an engraver, and a year later wrote a MS. of 500 pages entitled "Cosmologie universelle," from which later emerged his "World before the Creation of Man." In 1858 he entered the Paris Observatory as a computer, but found under the austere rule of the great Le Verrier little play for his fertile imagination. Leaving the Observatory in 1862, he was immediately welcomed by the Bureau des Longitudes, where he was engaged for three years, presumably in computing work. At the age of twenty-one we find him editing the scientific review *Cosmos*, and in 1864 he commenced the publication of his "Annuaire astronomique," an almanac and astronomical review of unique type, which has now appeared regularly for sixty years. In 1867, Flammarion was recalled to the Paris Observatory by Le Verrier, and placed in charge of one of the largest telescopes for the measurement of double stars. In 1887, Flammarion's review *L'Astronomie* became merged in the monthly bulletin of the Société Astronomique de France, and it is only a few years ago that the original name was restored.

In June 1922, Flammarion's eightieth birthday was commemorated by an immense meeting of his admirers in the great hall of the Sorbonne, Prince Bonaparte presiding in the presence of M. Painlevé. Shortly afterwards Flammarion received one of the greatest honours France has to bestow on a living subject: a commandership of the Legion of Honour.

WILLIAM PORTHOUSE.

THE death on May 26 of Lieut.-Commander Henry Edward O'Neill, R.N., removes one of the last survivors of the pioneer explorers of tropical Africa. Born in 1848, he entered the Navy in 1862 and first saw service in the operations for the suppression of the slave trade on the east coast of Africa. Soon after his appointment in 1879 as British Consul at Mozambique, O'Neill began a series of important explorations between the coast and Lake Nyassa and in the valley of the Shiré river. In five years he completed more than a dozen important journeys and discovered Lakes Amaramba and Chiuta and a new route from Blantyre to the coast. His careful observations of the position of Blantyre made it for long the best fixed position in that part of Africa. In 1885 he was awarded the Patron's medal of the Royal Geographical Society. He was associated with Captain (now Sir Frederick) Lugard in his early work against the slave raiders, and in 1888 distinguished himself in the defence of Karonga, on Lake Nyassa. On his health giving way he was compelled to leave Africa. For a time he was consul at Leghorn and at Rouen, and he retired from the service in 1899. His publications were mainly in the Proceedings of the Royal Geographical Society.

WE regret to announce the following deaths:

Mr. T. S. Brandegee, honorary curator of the herbarium of the University of California, on April 7, aged eighty-two years.

Prof. Heinrich Müller-Breslau, professor of statics and building construction at the Technical High School of Charlottenburg—Berlin since 1888, and a fellow of the Berlin Academy of Sciences, on April 23, aged seventy-three years.