of the neighbourhood occurred an interesting Ostracod, *Cyclocypris globosa*; and in the White Loch, a species still more interesting and more capricious in its distribution, *Darwinula Stevensoni*.

As regards the botany of the district, I can say very little. My last two visits were made about midsummer, and at that time the sea banks were gorgeous with masses of thrift and red cranesbill (*Geranium sanguineum*), the marshy flats with golden fields of water-flag, the fells with thickets of *Rosa spinosissima* and numerous orchids, the most conspicuous of which was the sweet-scented species, *Gymnadenia conopsea*. These, of course, are all flowers which cannot be overlooked, and are an ever-present delight to the eye and mind: less alluring species, which need to be hunted for, were for the most part passed unnoticed, and such as I did gather were of no particular interest.

G. STEWARDSON BRADY.

PROFESSOR ARTHUR CAYLEY, F.R.S.

MATHEMATICAL science has suffered a grievous loss by the death of Prof. Cayley, which occurred on Saturday last, at Cambridge. There is hardly a branch of pure mathematics which is not indebted to him for original contributions of the highest value, while the important problems which have been elucidated by him are so numerous, and cover so wide a field, that he was certainly one of the greatest mathematicans which the world has ever known.

It was in September 1883, when Cayley was President of the British Association, that he was ranked among our "Scientific Worthies," Dr. G. Salmon being his biographer. We refrain, therefore, from giving a long notice of his life, and content ourselves with a brief sketch of his scientific work.

Cayley was born August 16, 1821, at Richmond, Surrey. At a very early age he showed great liking and aptitude for arithmetical calculations. He entered King's College School, London, at the age of fourteen, and three years later went to Cambridge, where he entered Trinity College. In 1842 he came out as Senior Wrangler and First Smith's Prizeman. Sir George Stokes had been Senior Wrangler in the previous year, and the late Prof. Adams obtained the distinction in 1843.

While still an undergraduate, Cayley commenced his career of mathematical publication by a paper in the *Cambridge Mathematical Journal* for 1841, but it was not until 1852 that he addressed a memoir to the Royal Society, of which he was elected a Fellow in the same year. Very soon after taking his degree at Cambridge, he entered the legal profession, and was called to the Bar in 1849. But during his career as a barrister, he was constant to his first love, mathematics, and it was while in legal practice that some of his most brilliant mathematical discoveries were made. In 1863, after fourteen years of chamber life in Lincoln's Inn, he returned to Cambridge to fill the newly-instituted Sadlerian Professorship of Mathematics, and no one could have been better fitted than he to discharge the duties of the holder of the chair, viz. "to explain and teach the principles of pure mathematics, and to apply himself to the advancement of the science."

With regard to Cayley as an original investigator, his special merit has been described by Mr. Glaisher, who termed him "the greatest living master of algebra." It is difficult to select the work for which he will be the best remembered, but Prof. Salmon defined it as "his creation of an entirely new branch of mathematics by his discovery of the theory of invariants, which has given quite a new aspect to several departments of mathematics . . . And the effect has been that the knowledge which mathematicians now possess of the structure of algebraic forms is as different from what it was before Cayley's time as the knowledge of the human body possessed by one who has dissected it and knows its internal structure is different from that of one who has only seen it from the outside."

Among the honours which Cayley received, may be mentioned the Royal Medal of the Royal Society, awarded to him in 1859, and the Copley Medal in 1882. He was a correspondent in the section of Astronomy of the Paris Academy of Sciences, and was a Fellow or Foreign Member of many other societies and academies, both at home and abroad. He was given the honorary degrees of D.C.L. by the University of Oxford in 1864, and the LL.D. by Dublin University in the following year. Later, the University of Edinburgh conferred upon him a similar honour, and he received the degree of Sc.D. from his own University. The Universities of Leyden, Göttingen, and Bologna also conferred upon him the degree of Ph.D. In 1890, the President of the French Republic made him an officer of the Legion of Honour. This distinction was granted in consequence of a request addressed to the French Minister of Foreign Affairs by the President and other members of the Academy of Sciences.

Cayley's mathematical papers, commencing in the year 1841, have appeared in every periodical mathematical publication of importance in Europe and America. In the year 1887 he undertook the work of editing the series of ten quarto volumes, in which the Syndics of the Cambridge University Press are publishing his collected mathematical papers. The publication of these volumes commenced in 1889, and six of the volumes were reviewed in these columns a year ago (NATURE, January 18, 1894). The number of papers which appear in the six volumes is 416. Altogether seven volumes have as yet appeared. As Cayley is responsible for 724 titles in the Royal Society Catalogue down to 1883, and he has since produced a considerable amount of mathematical work, it seems improbable that ten volumes will be sufficient to contain the results of his prodigious activity and enormous literary industry.

What more need be said about this great master of mathematics? He sacrificed prospects of advancement in the law in order to follow the mathematical work to which he was devoted. He had the power to teach, and the ability to extend the boundaries of knowledge. He was "as distinguished for the amount and universality of his reading as for his power of original work." Truly, his memory will "outlive the life of dust and breath."

The funeral service will take place in the Chapel of Trinity College to-morrow (Friday). Lord Kelvin will be present to represent the Royal Society, and other men of science will probably attend to do honour to the memory of their brilliant fellow-worker.

NOTES.

WE are enabled to state that the communication to the Royal Society on "Argon, a new Constituent of Air," by Lord Rayleigh and Prof. Ramsay, to be given at the Royal Society to-day, will refer to the density of nitrogen from various sources; to methods for removing free nitrogen from air; to the separation of argon from air by diffusion; to the density of argon; to its spectrum (on which a short paper will be read by Mr. Crookes); and to its behaviour at low temperatures. It is interesting to note that Prof. Olszewski, of Cracow, has liquefied and solidified the gas, and will communicate a short paper on the subject. The solubility in water is also recorded. Various attempts to induce chemical combination are described, and general conclusions are drawn in a final section. The ratio of its specific heats shows it to be a monatomic gas, and proves that its atomic weight is approximately 40. The meeting will not be held in the apartments of the Royal Society, but in the theatre of the University of London.