

Hirst received a cordial welcome from the mathematicians of Southern Italy, and then going north he followed the victorious armies as far as San Martino and Solferino. After the Peace of Villafranca he visited the town of Cremona, and here commenced an acquaintance of life-long duration with Prof. Luigi Cremona.

In 1860, Dr. Hirst took up his residence in London, and for a short time took the advanced mathematical classes in University College School, in consequence of Mr. Cook's illness, and on that gentleman's death he became his successor. This office Dr. Hirst held for five years, and here, with Prof. Key's full concurrence (see Dr. Hirst's preface to Wright's "Elements of Plane Geometry," 1868), he taught geometry to classes of beginners without the use of "Euclid." Subsequently, in 1870, at the request of the Ladies' Educational Association, he gave a course of twenty-four lectures on the subject of geometry to a class of sixty ladies at St. George's Hall. The syllabus of these lectures was printed at the time. He was so well satisfied with the results of his attempt that when, in 1871, the Association for the Improvement of Geometrical Teaching was started, though he had taken no part, directly, in its formation,¹ he at once gave in his adhesion to the movement, and contributed very materially to its success, by his accepting the office of President, and by his doing yeoman's service during his tenure of the office (1871-78). Previous to this Dr. Hirst had, in 1865, been elected Professor of Mathematical Physics in University College. This post he vacated in 1867, when he succeeded Prof. de Morgan in the Chair of Pure Mathematics. It was on January 16, 1865,² that the London Mathematical Society was started. Of this Society Dr. Hirst was one of the pillars, and it was in a great measure through his fostering care that it has made the mark it has. He served on the Council from 1865 to November 1885, and for the session 1890-91. He vacated the office of Treasurer when he was elected President for the years 1872-73, 1873-74.

In 1870, Dr. Hirst was appointed to the new office of Assistant Registrar to the University of London, and thereupon resigned his Professorship, and the General Secretaryship of the British Association, which he had held from 1866. In 1873, when the Royal Naval College was founded, he became the Director of Studies, and held the office for ten years, when the precarious state of his health necessitated his retirement, and the passing of several winters abroad. He died on February 16.

In 1861, Dr. Hirst was elected a Fellow of the Royal Society. He was three times a member of the Council of the Society, and twice one of its Vice-Presidents. In 1883 one of the Royal Medals was awarded to him for "his investigations in pure geometry; and, more particularly for his researches into the correlation of two planes and into the complexes generated by them." He was a Fellow of the Royal Astronomical Society, a member of the Physical Society, and of several Continental Societies. He served for some years on the Council of University College, London, and was also a member of the Senate of the University of London.

Dr. Hirst revised the mathematical articles in Brande's "Dictionary of Arts and Sciences," and contributed new ones; and published a translation of Clausius's treatise on "The Mechanical Theory of Heat" (1867).

The following titles of papers may be mentioned:—"On the Volumes of Pedal Surfaces" (Phil. Trans., 1863; *Crelle*, lxi., 1863; and Tortolini, *Annali*, v., 1863). "On the Quadric Inversion of Plane Curves" (R.S. Proc., 1865; cf. Chasles, "Rapport," p. 167, "Ce mémoire est un travail fort complet"). This was his first *purely* geometrical paper. It was translated by Cremona in the

Annali di Matematica (vii., 1865), and a form of it is published in the *Nouvelles Annales* (v., 1866). His remaining papers, mainly contributed to the London Mathematical Society's Proceedings, are:—"On Correlation in Space" (abstract of Presidential Address, 1874, Proc., vi.). "Note on the Correlation of Two Planes" (Proc., viii.). "On Cremonian Congruences" (Proc., xiv.). "On Congruences of the Third Order and Class" (Proc., xvi.). "On Cremonian Congruences contained in Linear Complexes" (Proc., xvii.). "On the Correlation of Two Spaces, each of Three Dimensions" (Proc., xxi.). "On the Complexes generated by Two Correlative Planes" (*Chelini Memorial Volume*, 1881). "Sur la Congruence Roccella" (*Circolo Matematico*, 1886).

DR. THOMAS STERRY HUNT.

DR. T. STERRY HUNT, who died at New York on the 12th of this month, in his sixty-sixth year, was widely known from his geological works, especially those relating to chemical geology. For some years past he had been in feeble health, suffering much from heart-disease. Early in this year he was attacked with influenza, from which he seemed to be recovering, but a relapse occurred, from which he failed to rally. Born on September 6, 1826, at Norwich, in Connecticut, he was educated for the medical profession, but in 1845 became assistant to Prof. B. Silliman at Yale College, and was also chemist to the Geological Survey of Vermont. In 1847 he joined the Geological Survey of Canada, under Sir W. Logan, as chemist and mineralogist. From 1856 to 1862 he was Professor of Chemistry at Laval University in Quebec, giving his lectures in French. From 1872 to 1878 he was Professor of Geology at the Massachusetts Institute of Technology. He was elected a Fellow of the Royal Society in 1859, and in 1881 received the honorary degree of LL.D. at Cambridge. Dr. Hunt was one of the founders of the International Geological Congress at Philadelphia, in 1876; he attended the meetings of the Congress at Paris in 1878, Bologna in 1881, Berlin in 1885, and London in 1888, taking an active part in the proceedings of each.

Although by birth a citizen of the United States, he is best known as a Canadian geologist, and, after retiring from the Canadian Survey, he lived for some years in Montreal. But latterly he preferred to consider himself once more as belonging to the United States, and for a few years before his death was a resident in New York.

Dr. Hunt's most important geological work was done in connection with the Geological Survey of Canada, with and under Logan. They led the way in the study of the Archæan rocks of that area, and Hunt gave to them many of the names which have since become well known, and too widely used, in the Archæan controversy. His work on the geology of petroleum was of high value, and he long ago clearly stated generalizations as to its occurrence which later investigations, over wider areas in North America and in other districts, have fully verified. Other important researches, published in the official Reports of the Canadian Survey and elsewhere, related to limestone, dolomite, and gypsum; salt; the chemistry of natural waters; the porosities of rocks; rock-weathering, &c. The well-known "Geology of Canada," issued by Logan in 1863 as Director of the Survey, was in large part written by Hunt, the parts on lithology and on economic geology being almost entirely his; he likewise read the proofs of the whole. He also wrote much on Alpine and Italian geology, and on the classification of the older Palæozoic rocks; in the Cambro-Silurian controversy he was a warm advocate of Sedgwick. The origin of serpentine was also a favourite subject, he stoutly maintaining its aqueous origin. As regards the ancient crystalline rocks generally, he to a large extent

¹ Opening remarks in the Presidential Address, A.I.G.T., First Report, January 17, 1871 (cf. also *NATURE*, vol. ii. pp. 65, 141, 164).

² Memoir of Augustus de Morgan, pp. 280-86.

reverted to the Wernerian view, but with some important modifications; these he explained in his "crenitic hypothesis."

Dr. Hunt's earlier papers (1846-49) were wholly on chemistry and mineralogy, and to these subjects he always gave much attention. Some of his latest writings are purely chemical, dealing mainly with the more speculative aspects of that science. Perhaps in these questions, as is certainly the case with many of his theoretical views on geology, Dr. Hunt failed to carry conviction to the minds of his fellow-workers; and it may well be doubted if some of his views on these matters will ultimately add to his scientific reputation. But it would be unjust on this account to ignore the mass of solid work which he accomplished, and the suggestive hints which are scattered throughout his writings.

Dr. Hunt was a man of wide reading and general culture; he possessed a marvellous memory, and great conversational powers. In his company one might for hours forget that science was his special study, so well informed was he in history, literature, and philosophy. His conversation on such subjects possessed an additional interest from his personal acquaintance with many American authors. He was thus an excellent travelling companion, and the writer will not soon forget with what thrilling effect he recited Macaulay's "Horatius," within sight of Cortona and its Etruscan walls.

W. TOPLEY.

NOTES.

THE date of the Bakerian Lecture to be delivered before the Royal Society has been altered to March 10. Prof. James Thomson has chosen as his subject "The Trade Winds."

THE general arrangements for the Edinburgh meeting of the British Association have now been completed. The first general meeting will be held on Wednesday, August 3, at 8 p.m., when Dr. William Huggins, F.R.S., will resign the chair, and Sir Archibald Geikie, For. Sec. R.S., Director-General of the Geological Survey of the United Kingdom, President-Elect, will assume the Presidency, and deliver an address. On Thursday evening, August 4, at 8 p.m., there will be a *soirée*; on Friday evening, August 5, at 8.30 p.m., a discourse will be delivered by Prof. A. Milnes Marshall, F.R.S.; on Monday evening, August 8, at 8.30 p.m., a discourse on magnetic induction will be delivered by Prof. J. A. Ewing, F.R.S.; on Tuesday evening, August 9, at 8 p.m., there will be another *soirée*; and on Wednesday, August 10, the concluding general meeting will be held at 2.30 p.m. The different Sections will assemble for the reading and discussion of Reports and other communications on Thursday, August 4, and on the following Friday, Saturday, Monday, and Tuesday. The delegates of Corresponding Societies will meet on Thursday, August 4, and Tuesday, August 9, at 3.30 p.m. Excursions to places of interest in the neighbourhood of Edinburgh will be made on the afternoon of Saturday, August 6, and on Thursday, August 11.

It is proposed that Englishmen shall celebrate the fourth centenary of the discovery of the New World, and do honour to the memory of Columbus, by establishing in Jamaica a marine biological station on the lines of the marine laboratories at Naples and Plymouth. The institution would be called "the Columbus Marine Biological Station." An excellent letter on the subject by Lady Blake appeared in the *Times* on Wednesday. The scheme has been laid before Prof. Huxley, Prof. Ray Lankester, Prof. Flower, Dr. Günther, Dr. Ball, Sir John Lubbock, Mr. Scott, Mr. Sclater, and numerous other scientific men, all of whom warmly approve of it. For the establishment of the laboratory on a sound basis an outlay of £15,000 will be

required. The following have consented to receive subscriptions:—Prof. Ray Lankester, Oxford; Dr. Günther, British Museum (Natural History), Cromwell Road; Dr. Ball, Science and Art Museum, Dublin; the Duchess of St. Albans, Bestwood Lodge, Arnold, Notts.; and Messrs. Coutts and Co., bankers, 59 Strand. The Hon. Walter Rothschild, 148 Piccadilly, has undertaken the duties of honorary secretary.

ON Saturday last a meeting was held in the Combination Room of St. John's College, Cambridge, to discuss a proposal for the provision of a national monument to the late Prof. Adams. The Rev. Dr. Taylor, the Master of the College, presided; and among those present were Dr. Peile (Master of Christ's, and Vice-Chancellor), Dr. Ferris (Master of Caius), Dr. Porter (Master of Peterhouse), Mr. Aldis Wright (Vice-Master of Trinity), Dr. Forsyth, Prof. Hughes, Dr. Hobson, Prof. Thomson, Dr. Glaisher, Dr. Frost, Dr. Sandys, Prof. Mayor, and Sir George G. Stokes, M.P. The Master said that Prof. Adams had memorials in Cambridge in the Adams Prize, and his portraits at that College and at Pembroke. His own work was his monument in the annals of science. They wished to commemorate his name and personality in the eyes of the world in that central sanctuary where, age after age, they commemorated their national types of various kinds of supreme excellence which were the glory of the world. The first suggestion of that came to him from Archdeacon Farrar. The suggestion had been mentioned at a College meeting and by it adopted, and they were met that day to carry it out. He thought the better method would be to form a large and influential committee, containing the most prominent names in mathematics and science, which would enable them to show there was a general feeling in favour of it. Then he thought the request might be made to the Dean and Chapter, on behalf of the Committee, by the Chancellor, the Duke of Devonshire, and in a letter which he had received from the Duke he stated that he should be very glad to give any assistance in his power to carry out the wishes of the Committee. Among those who had agreed to join the Committee were the Astronomer-Royal, the Master of Trinity, Dr. Salmon (Provost of Trinity College, Dublin), the Master of Corpus, Mr. Justice Romer, Prof. Jebb, Mr. Courtney, Lord Rayleigh, Prof. Newton, the Gresham Professor of Astronomy, Prof. Cayley, and Sir Donald Smith (Chancellor of Montreal University), who asked to be allowed to subscribe £100. The following motion, proposed by the Master, seconded by Sir G. G. Stokes, and supported by Dr. Glaisher and Prof. Liveing, was carried unanimously:—"That the late Prof. John Couch Adams, by his discovery of the planet Neptune, and other masterly work, published or unpublished, is entitled to be named with the great astronomers of the world; and that this meeting pledges itself (so far as in it lies) to promote and carry out the scheme for placing a memorial to the late Professor in Westminster Abbey." The following resolutions were also carried:—"That the memorial consist of a bust, with tablet and inscription." "That a Committee be formed (with power to add to their number) to carry out the scheme; that the Master of Pembroke College and Prof. Liveing be the Treasurers, and the Master of Peterhouse, Dr. D. MacAlister, and Dr. Glaisher the Secretaries, and that such and such persons be the Executive Committee." "That any surplus from subscriptions after payment of the necessary expenses to be used in the first instance to defray the cost of presenting copies of the collected papers of Prof. Adams to learned Societies and libraries at home and abroad, and that the remainder (which, if of sufficient amount, shall be constituted a permanent memorial fund) be offered to the Master and Fellows of St. John's College to form an Exhibition or Scholarship fund for the encouragement of the study of mathematics or physics by the undergraduate students of the