

any other mental characteristic, impelled him forward to win imperishable renown as the originator of the high-pressure engine.

Prof. Inglis's study was naturally based on the record of Trevithick as given in the biography published by his son Francis in 1872, and unfortunately he was not able to throw much new light on the actual construction of the engines through which Trevithick is known as the 'father of the locomotive', but his lecture contained many notable passages concerning the man himself.

The actual centenary celebrations began on Saturday afternoon, April 22, at Camborne by a demonstration. This was followed on Sunday forenoon by memorial services in Tregajorran Methodist Chapel, which stands on the site of Trevithick's birthplace, and in Dartford Parish Church, in which is a bronze tablet recording Trevithick's burial in the churchyard of St. Edmund, King and Martyr. Reference was also made to the centenary at evensong in Westminster Abbey by the Archdeacon of Westminster, the Ven. V. F. Storr, and after this service, the Memorial Committee placed a wreath beneath the Trevithick memorial window in the north aisle.

The service at Dartford Parish Church was attended by many members of the Urban District Council, representatives of many local associations and engineering societies and by the staff and employees of Messrs. J. and E. Hall, Ltd., in whose works Trevithick's last days were spent. The service was conducted by the vicar, the Rev. E. Mitchell, the sermon was preached by the Right Rev. the Lord Bishop of Rochester, and after the service an address was given by Mr. L. St. L. Pendred and wreaths were placed on the memorial tablet.

In concluding an address of singular eloquence, Mr. Pendred said: "I could speak to you of Trevithick's inventions; of his locomotives, his steam boats, his pumps, his boilers, his tunnel under the Thames. But what would it avail? You may read of these things if you will. They are now of no account. The tide of invention has swept over them. Precious and dear to the memory, but all sunken; not reclaimable, not useful any more:

'Wedges of gold, great anchors, heaps of pearls,  
Inestimable stones, unvalued jewels,  
All scattered in the bottom of the sea.'

"No inventor will turn to them for inspiration. Dead things. Drowned things. Swept over by the vast flood of invention which broke all barriers soon after Trevithick had gone to rest, and still sweeps onwards. You may see them in the Museum now. Toys; antiques; quaint relics. Valueless things . . . And yet, not valueless if they bring back the gift of Wonder to an age that has ceased to be surprised at anything. And if we can only wonder, we shall pay the greatest tribute of our praise to Trevithick. We shall wonder how a man with so little knowledge, so few opportunities of learning, such poor means of achieving, yet wrought from his brain things that no one else could think of, could *make*. It is not enough to think, one must *do* too. There are always some who will rob every inventor of his honour by proving that others had thought of the same thing before him. Thinking is not enough; it is the men who hammer their thoughts into realities that matter to the world. That was the way of Trevithick, the Cornishman; that is why we honour his name to-day."

## Obituary

PROF. J. MILLAR THOMSON, F.R.S.

**J**OHN MILLAR THOMSON was born in 1849 in the precincts of the old college of Glasgow, where his father, Prof. Allen Thomson, was professor of anatomy. John Millar Thomson's family has had a long connexion with the University of Glasgow, dating from 1761, at which time his great-grandfather, John Millar, was professor of law. Other members of the family afterwards held chairs in mathematics, philosophy, medicine and anatomy, pathology and military surgery in one or other of the Scottish universities.

John Millar Thomson was an only child and was brought up in very close companionship with his father, with the result that he was from early boyhood constantly in contact with notable people in academic circles, especially as his father was one of fourteen professors all living in the old college. As a boy of thirteen years of age he travelled with his father in France and Germany, visiting a number of his father's friends. They remained for some time in Wurzburg with Allen Thomson's great friend, Kölliker.

During the time when Prof. Allen Thomson was going into the plans of laboratories and lecture-rooms in the new University buildings at Glasgow, John Millar Thomson accompanied his father on several occasions where, as a boy, he could be helpful in such simple ways as 'holding the tape' and in taking down notes. This started an interest in architectural matters which he retained all his life. In discussing laboratories with him when he was at King's College, I have lively recollections of his sitting down to make plans, and of his saying, as he brought his scales and ivory rule out of his pocket, "These are the very ones with which my old father drew out his plans when I was a boy". His skill as an architect was such that when he drew out plans for a house for one of his cousins, these were accepted by the builders as complete, and were worked to by them.

Educated at the High School and the University of Glasgow, Millar Thomson entered the faculty of medicine after having first taken the usual curriculum in arts. He soon came to the conclusion, however, that he did not wish to continue

a medical training. On the advice of Prof. Thomas Anderson and Prof. Lyon Playfair, he took up the study of chemistry. Naturally, from his early associations with so many professors, his ambition was to enter academic life. He worked as a student in Prof. Anderson's laboratory from 1866 until 1871, being appointed assistant to Prof. Anderson in 1869. In 1868 he came to London to see Prof. W. A. Miller and Prof. C. L. Bloxam with regard to a demonstratorship in chemistry at King's College, London, vacant owing to the transference of his friend J. T. Bottomley to the Physical Department of King's College. I remember his telling me about that interview and saying that, after it, he came to the conclusion that he was too young for the post. He returned, therefore, to Glasgow until, on the death of Prof. Miller in 1870, Prof. Bloxam, who succeeded to the chair of chemistry in King's College, sent for him and offered him a position of assistant demonstrator, which he took up early in 1871. Walter N. Hartley at the same time was appointed senior demonstrator. At that time the assistant demonstrator did not lecture, but Hartley became seriously ill shortly after his appointment, and John Millar Thomson took over the whole of the senior demonstrator's work in both the day and evening-class departments. Bloxam told me, in later years, of the great success of John Millar Thomson's lectures and of his organisation of the practical classes given into his charge.

In 1879, Hartley was appointed professor at the College of Science, Dublin, and Millar Thomson became senior demonstrator in his place. I attended his lectures in that year, and I can recall now the ease with which they could be followed, the clearness of his exposition, and the wealth of experiment with which the lectures were illustrated. His lectures were always interesting and often experiments difficult to carry out were shown by him with brilliant success, but he never allowed applause in College lectures. One other thing I can recall very clearly, namely, there was no chance of being visibly inattentive; still less was there any opening for levity or other form of disturbance. This was a tribute not only to his power of holding an audience, but also to his personality: one felt that 'fooling' was quite out of place. But strict and dignified as he was in the work of the College, both then and throughout his career he gained, in addition to the high respect of his students, their lasting affection.

From 1880 until 1887, in addition to his work at King's College, Millar Thomson gave lectures in chemistry at Queen's College, Harley Street, and was given the title of professor of chemistry in that College. It was during this time, and before he took the responsibility of the headship of the Chemical Department at King's College, that he carried out his investigations in connexion with crystallisation and supersaturated solutions, and also on a number of other subjects, for example, the composition and properties of building stones,

in continuation of some work which he had done under Prof. Anderson at Glasgow.

Although he was much occupied with his own teaching and experimental work, he was a man with such strong general sympathies that he could not avoid being pressed to take an active and guiding part in practically all the College functions and functions organised by the students' societies. The Dramatic Society in particular owed much to him. He possessed remarkable dramatic talents and was truly a fine actor. This did not appear in his lectures, either at the College or at the many public lectures which he gave; into these he threw all his earnestness. It did, however, give him a singular power of expressing the wishes and desires of others when welcoming a new colleague, bidding good-bye to a retiring colleague, or speaking at functions such as College dinners or public dinners. I always felt, when John Millar Thomson spoke on such occasions, that in virtue of his personality, his manner, and his simple but effective elocution, he set the tone of the whole function on a high level. It was typical of him to say the right thing whenever he was called upon to speak, even at a moment's notice.

I must not omit some reference to his activities in photography, in which he had a life-long interest; for some time in his earlier days he taught the principles and practice of photography to the engineering students of the College.

The individual character and ability which he had shown, and the influence which he had exerted in promoting the highest interests of the College in these earlier posts, were emphasised when Millar Thomson became head of the Chemical Department at King's College. It was natural, therefore, that when the post of vice-principal became vacant in 1905 on the resignation of Prof. W. Grylls Adams, it was the unanimous desire of his colleagues that John Millar Thomson should be invited to take over the additional duties of vice-principal. He accepted, and represented the College on many important occasions. I have often heard from those who were present on such occasions how impressed they were with the charm, power and highmindedness of the man.

In notices of him in other places, his public work in connexion with the Chemical Society, the Institute of Chemistry and the University of London, has been described. I have endeavoured here to give some impression of the man himself. My opportunities for knowing him intimately were many, for I saw a very great deal of him not only in College but also in his private life.

I should not like to conclude without recalling Mrs. John Millar Thomson, the youngest daughter of Dr. Charles Arthur Aikin, a grand-niece of Miss Lucy Aikin, and a grand-niece of Mr. Arthur Aikin (who was secretary of the Royal Society of Arts from 1817 until 1839): she was also a great grand-niece of Mrs. Barbauld. I have often heard John Millar Thomson say how much he owed to the sympathy and ability of his wife. I myself was frequently present in their home, and when

we were discussing College matters or the subject of a lecture, he would often turn to her for criticism and suggestions connected with decisions which he had made, and always with benefit.

John Millar Thomson was a remarkable man, of great ability, earnestness of purpose, and commanding influence, combined with a fine sense of humour and a great power of sympathy. He would have been a smaller man if he had realised how great a personality he really was.

HERBERT JACKSON.

THE death is announced of Mr. Walter E. Roth, which took place on April 5 after an operation at

Demerara. Mr. Roth was a brother of the late Mr. H. Ling Roth, curator of the Bankfield Museum, Halifax. For many years before proceeding to British Guiana, Mr. Roth was Protector of Aborigines, Queensland, Australia. He was the author of "Ethnological Studies among the North-West Central Queensland Aborigines" (1897) and of a number of monographs on various aspects of the culture of the Queensland aborigines which appeared as official bulletins. He also wrote a number of papers, mostly technological, on the culture of the Indians of British Guiana which appeared in the *Journal of the Royal Anthropological Institute*, the reports of the Bureau of American Ethnology and elsewhere.

### News and Views

#### Jews in Germany

THE political significance of Nazi revolutionary supremacy under Herr Hitler in Germany is outside our field; but the treatment of the Jewish learned and professional classes stands condemned in the eyes of the intellectual world. It is a relapse to the crass repression of the Germany of Heine's day and the *Judenhetze* of Prussia fifty years ago. An outstanding case is the resignation by Prof. James Franck, Nobel prizeman with G. Hertz for physics in 1925, of his chair in experimental physics in the University of Göttingen. Prof. Franck, it is said, probably would have been spared the forced retirement now operative against Jewish officials, including university professors; but he feels that Germans of Jewish descent are being treated as foreigners and foes of the Fatherland, and asks to be released from his office. Prof. Franck served with distinction during the War and received the Iron Cross of the First Class. His action follows fittingly on the retirement of Prof. A. Einstein from Germany, and is the logical, indeed the only, reply for a man of his standing to the acts by which Jews are being excluded from the liberal professions and debarred from the universities. This is the achievement of a movement which, ever since the War, has sought to mould the German people to one pan-Teutonic pattern—in accord with neither the facts nor the conclusions of ethnology. In the denial of a part in Germanic culture to any element alleged to be foreign, Jews, liberals and socialists are to be treated alike; but Jews have suffered most.

THE Jewish people need no one to hold a brief on their behalf. The contribution of the Jews to the growth of civilisation in the Western world speaks for itself. There were Jews in Germany in Roman times, and wherever they were found in medieval Europe, in spite of, or perhaps because of, their disabilities, they were laying the foundations upon which the modern system of finance and commerce was built up. In Italy as bankers, they rivalled the great houses of Lombardy. In the liberal arts, the preservation of much of classical literature and philosophy was due to them. In the later Middle Ages

they were largely responsible for the reputation of Spain as a centre of intellectual and scientific development. In the middle of the eighteenth century the revival of Jewish learning, which had Mendelssohn for its inspiration and leader, paved the way for the Jewish people to take its place in the intellectual life of the respective countries of their adoption as their disabilities were gradually removed, so that Bunsen could say that, in the German universities of his day, the greater number of the principal professors were Jews. Everywhere the Jews have won to pre-eminence in literature, in the arts, especially music, and the drama. Even if it were not admitted that the Jews had contributed to Germanic culture—a contention which could not be accepted without argument—in the world of learning and science it is to men such as Oppert, the classical scholar, Benfey, the Orientalist, and Heinrich Hertz, the physicist, to take three names only, selected almost at random, that she owes her international standing, just as much as to any of her sons of purest German stock.

#### William Morgan, F.R.S., 1750-1833

WILLIAM MORGAN, who died on May 2, 1833, was the son of a doctor at Bridgend and studied medicine in London, but he failed to make headway after his father's death. He returned to London, where his uncle, Richard Price, found him work with the first life assurance company to grant assurances for the whole of life at a level premium depending on the age when the assurance was effected. This new venture gave Morgan his opportunity. He studied mathematics, applied them to life contingencies and produced, in 1779, his "Doctrine of Annuities and Assurances". He followed this with a series of five papers to the Royal Society in which, for the first time, solutions were given of complicated survivorship probabilities in terms that enabled a computer to use actual mortality statistics instead of an arbitrary law of mortality such as de Moivre's. He was given the Copley Medal in 1789 and his fellowship of the Royal Society in the following year. Morgan did still more important scientific work in connexion with his business, where he worked out the proper reserves that should be kept by a life assurance company and studied