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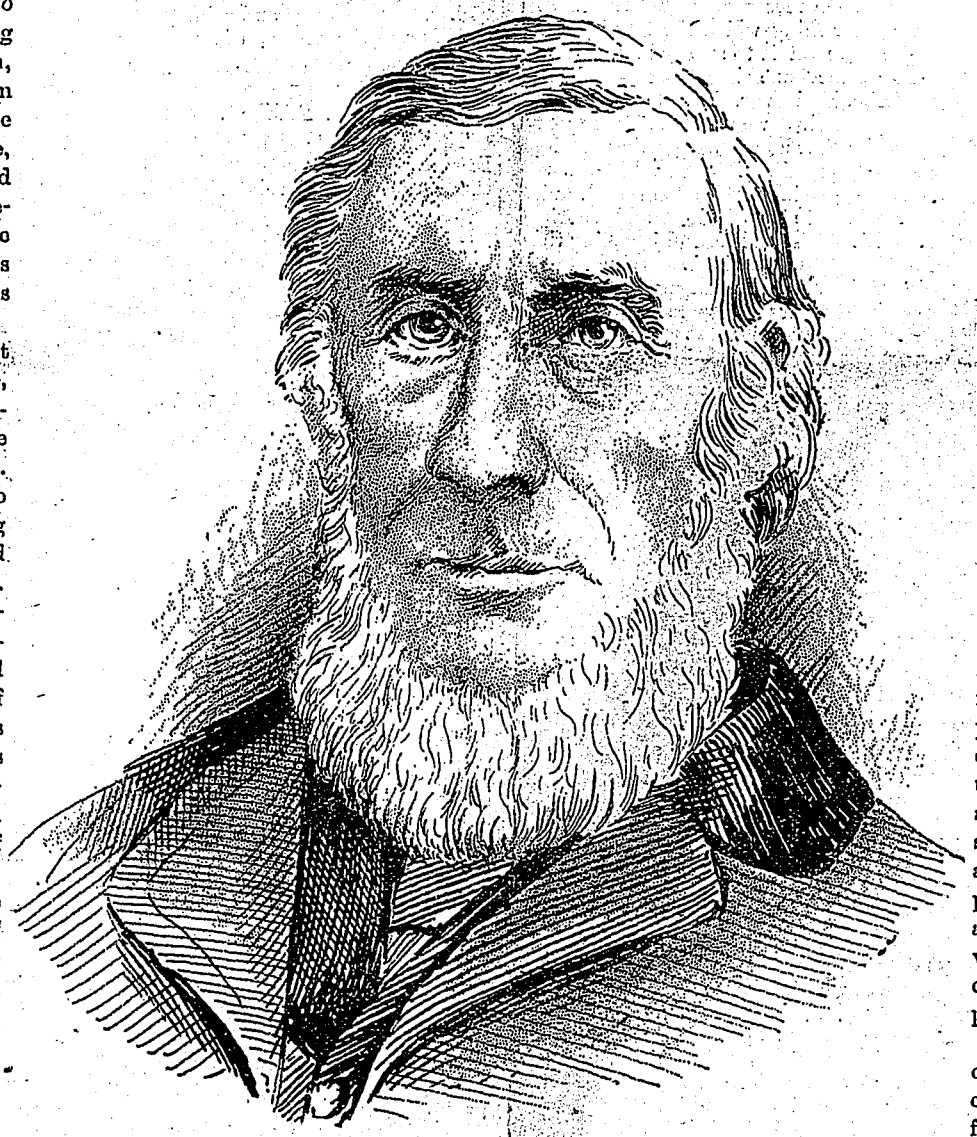
JOHN TYNDALL.

BY JAMES SIME, IN THE 'GRAPHIC.'

Everyone who takes the slightest interest in the intellectual movements of the present age was sorry to hear of the death of Professor Tyndall. No contemporary man of science was more widely known or held in higher esteem. It cannot, of course, be said that as an original investigator he ranked with the most illustrious discoverers of the nineteenth century. His contributions to knowledge cannot be compared —nor would he himself have wished to compare them—with the far-reaching results achieved by such men as Darwin, Faraday, and Joule. Still, even as an investigator he held an honored place among the scientific workers of his time, and as an expounder of the facts and laws brought to light by physical research, he displayed qualities which have rarely, if ever, been surpassed. In this respect he was equalled only by his friend Professor Huxley.

Tyndall's career, like that of most men of science, was an uneventful one, so far as external incidents were concerned. He was born in 1820 in the village of Leighlin Bridge, county Carlow. The branch of the Tyndall family to which he belonged is said to have sprung from Gloucestershire, and to have settled in Ireland in the seventeenth century. His father was a trader in humble circumstances, but was a man of fine intelligence and upright character. He had so high a conception of the value of education that he contrived to keep his son at school until he was nineteen years of age. Tyndall then joined the Ordnance Survey as 'Civil Assistant,' and in this position, through the kindness of his chief, General George Wynne, R.E., who afterwards became his intimate friend, he was allowed to make himself familiar with every department of the Survey's work, both in the office and in the field. In 1844 he accepted an appointment offered to him by a Manchester firm, and during the next few years his energies were devoted to engineering in connection with railways. Meanwhile, he had become profoundly interested in various branches of abstract science, and his railway work, absorbing as it must often have been, did not prevent him from carrying on studies which accorded with his inclination. In 1847, hoping to obtain more leisure for the development of his scientific powers, he accepted a post at Queenwood College, Hampshire. Here he became intimate with Dr. Frankland, who was instructor in chemistry; and in 1848 the two friends went together to Marburg, the university of which had been made famous among men of science by the illustrious Bunsen. At Marburg Tyndall worked strenuously, studying not only under Bunsen, but under Stegmann, Gerling and Knoblauch. Afterwards he worked for some time with Professor Magnus at Berlin, so that when he returned to England he had not only a remarkably wide knowledge of physical science, but a thorough mastery of scientific method.

In 1850, during a visit from Germany to England, Tyndall made the personal acquaintance of Faraday, and in February, 1853, he delivered his first Friday evening



THE LATE PROFESSOR TYNDALL, LL.D., D.C.L., F.R.S.

discourse at the Royal Institution, for which Faraday's labors had secured a splendid reputation. Faraday was so much pleased with the new lecturer that on his proposal, Tyndall was elected to the Institution's Chair of Natural Philosophy, which had been held early in the century by Thomas Young. Tyndall had a warm admiration for the great man who had done him such good service, and his appreciation was finely expressed, after Faraday's death, in his well-known study of 'Faraday as a Discoverer.' When Faraday resigned the office of Director of the Laboratory of the Royal Institution, Tyndall was appointed his successor; and this position he held until 1887, when he retired. In 1876 he married Louisa, Lord Claud Hamilton's eldest daughter, who survives him. They built for themselves a pleasant home at Hind Head; and here, after his retirement, they lived during the greater part of the year, going for the summer months to their chalet on the Bel Alp, overlooking the Aletsch Glacier. Professor Tyndall, as all the world knows, had an almost passionate love for the Alps. His first visit to them was paid in 1849. In 1856 he went to them with Professor Huxley, and afterwards he allowed no year to pass without breathing their pure, invigorating air. The Alps interested him as a man of science, but their charm lay mainly in the power with which they appealed to his imagination. Tyndall was very far from being one of the Dryasdusts of science. A strong vein of poetry ran through all his thought and aspiration.

His researches on the properties of ice and on their relation to the theory of glaciers occupy an important place in the record of his original work. These researches were carried on partly in his laboratory, partly among the Alps, and have done much to prepare the way for the solution of a complicated set of scientific problems. In 1859 he visited Chamounix, and claimed to have determined by his measurements the winter motion of the Mer de Glace.

Even more valuable were his long-continued investigations on the relation of simple and compound gases and of vapors to radiant heat, especially radiant heat from sources at a moderate temperature. His inquiries on this question form the subject of no fewer than six papers in the 'Philosophical Transactions.' The conclusions at which he arrived were contested by his friend, the late Professor Magnus; but Sir George Stokes, in referring to them at the banquet given to Professor Tyndall in 1887, said that they had always seemed to him to bear the stamp of truth, and that their validity had been generally admitted. Some of the inferences from Tyndall's doctrine have an important bearing on questions relating to atmospheric temperature and climatological conditions.

For some time much interest was excited in this country by the question of 'spontaneous generation.' Tyndall threw himself with characteristic enthusiasm into the controversy, and succeeded in proving by a series of carefully planned experiments that the evidence for the theory of 'abiogenesis' was wholly inadequate. In this research he had occasion, of course, to use only such methods as were appropriate to his special departments of inquiry, and the result afforded a striking illustration of the value of the services which may, under certain circumstances, be rendered by physics to biology.

Important, however, as these and other investigations were, it is not chiefly to them that Tyndall owes his fame. He ranked among the foremost men of his time, mainly because of his extraordinary power of awakening in the non-scientific public a vivid interest in strictly scientific results and processes. There are not, perhaps, in any language more luminous treatises of their kind than his book on 'Heat, a Mode of Motion,' his corresponding volume on 'Sound,' and the essays in his 'Fragments of Science.' These works are masterpieces both of thought and style, and it is incredible, even if some of the conclusions set forth in them should become antiquated, that they will ever wholly lose the place they have won in popular scientific literature. They bring out with magnificent power not only the