tablet on the wall, inscribed with Pope's well-known couplet. But this house had importance in Newton's later life and in his work, and not only as his birthplace. It was here that he returned from his schooling at Grantham, at the age of sixteen, to take charge of the farm for his mother; and here, to the incalculable gain of science and the world, he showed such incompetence as a farmer that he was sent back to school, and thence to Cambridge. It was here, again, that he returned in the autumn of 1665, when the plague drove him from Cambridge; and here, during the following eighteen months of quiet exile in the country, his early ripening genius grasped already the essential principles of his major theoretical discoveries. You can still see the upper chamber which he then used as a study; and in the little orchard there is an old, recumbent apple tree, which, they will tell you, is descended by direct grafting from that which Newton saw. The land which Newton's family farmed is rapidly being laid waste, alas, by quarrying for ironstone; and soon there will be little left unspoiled save the orchard and garden around the house.

It has seemed to us that, in this year of commemoration, something should be done to preserve for posterity a house and garden which carry such momentous memories, and which have meant so much for science. We have accordingly formed a small committee, in which Sir John Russell and Sir James Jeans have joined with the officers of the Royal Society; and we are in negotiation with the lord of the manor as to the possibility of acquiring this now tiny but historic property, so that it may be put for as long as possible beyond the risk of damage or decay.

Then I think that it is our special duty at this anniversary meeting to remember that, while Newton's great discoveries belong to the world, they came to publication through the Royal Society, and that Newton occupied its presidential chair for the last twenty-four years of his long life. Though his "Opticks" was not published until after he had become president, his original work for science was practically finished by the time of his election, and he had for some years been Master of the Mint. There can be no doubt, however, that the wide fame of his achievements, and the respect and admiration in which he was everywhere held, did much, at a critical period in its history, to establish the prestige of this Society in the eyes of the world. Let us then remember to-day that Isaac Newton, the greatest man of science of our race, was also the greatest of the Royal Society's presidents.

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Sir Henry Dale also referred in appreciative terms to the attitude of the present owner of the Newton house and garden at Woolsthorpe, Major Christopher Turnor, who had expressed his willingness to dispose of the property for less than its value, for preservation as a Newton memorial. Sir Henry added that he had just learned that the Pilgrim Trustees would defray the cost of purchase. A photograph of the house was reproduced in NATURE of March 26, 1927 (Supp. p. 34), on the occasion of the two hundredth anniversary of Newton's death.

Sir Henry Dale's address was followed by lectures by Prof. E. N. da C. Andrade on "Newton and the Science of his Age", Lord Rayleigh on "Newton as an Experimenter" and Sir James Jeans on "Newton and the Science of Today". The manuscript of the first edition of the "Principia", the reflecting telescope and a solar sundial made by Newton, and other Newtoniana were exhibited in the library of the Royal Institution, together with demonstrations arranged by Lord Rayleigh to supplement those which accompanied his lecture.

# OBITUARIES

## Prof. J. N. Collie, F.R.S.

BY the death on November 1 of John Norman Collie, chemistry has lost one of her most outstanding personalities. To me, who knew him well from January 1889 until September 1939 when he left London to live in Skye, Collie was a true guide, philosopher and friend, and to-day it is my privilege to write of him as one of his last remaining friends for fifty-three years.

Collie was born on September 10, 1859, and was the son of the late John Collie. He studied chemistry under Prof. Letts at Bristol and afterwards was associated with Letts in two original investigations, the first on dimethylthetine ethyl ester and the second on tribenzylphosphine and tetrabenzylphosphonium salts.

In September 1888 Collie was appointed by Prof. W. Ramsay demonstrator in the Chemical Laboratories in University College, London, and I first met him when I entered the College as a young student in January 1889. Those of us who learned qualitative analysis under Collie found in him a born teacher, gifted with a salutary sarcasm which was tempered with a real understanding of the difficulties presented by a hitherto unknown field of study and provoked by strange results unrecorded in any text-book.

In 1896 Collie left University College on his appointment to the chair of chemistry in the College of the Pharmaceutical Society in Bloomsbury Square, London. In 1902 Collie returned to University College as professor of organic chemistry under Sir William Ramsay, the director of the Chemical Laboratories.

In the years following this appointment, Collie built up a great school of organic chemistry, and many men of high distinction to-day received their inspiration from him. Amongst these may be mentioned Prof. S. Smiles, Prof. T. P. Hilditch, Prof. A. W. Stewart and Dr. Irvine Masson. Just as on a ship the master is called the "Old Man", so it was in the organic laboratory, for Collie was invariably referred to as the "Old Man", a title of which he was very proud, for he knew all that in it lay—unbounded respect, admiration and affection.

Since my contacts with Collie in those years were mainly outside organic chemistry, it is more fitting that another should pay tribute to him as one of the great organic chemists of his time. Prof. Smiles writes: "I hesitate to compare Collie and Perkin, they were so different and yet supreme in their own line in their day. If I must compare them, I would attempt an analogy, a poor one as all such must be. Collie I would regard as the landscape gardener, whilst Perkin was the energetic producer of really fine crops of new varieties. Collie took a very broad view of the subject, the relations of various parts of it to one another, and of the whole to other branches

of chemistry. He was no specialist, anything which savoured of narrowness was repugnant to his nature, but he was a true philosopher. It was this that made his lectures and his teaching so interesting, for there always seemed to be something intriguing beyond the horizon of what he was saying. Collie always seemed to publish reluctantly, but anything he did publish was nearly always of a fundamental character; for example, dimethylpyrone and the related compounds which led to his really comprehensive generalization on the polyketides. Collie was the first to suggest a labile formula for benzene, which was familiarly known in the laboratory as the 'Collywobble'. Moreover, his investigation of naturally occurring compounds, necessarily in small quantities, led him to devise his semi-micro method of organic analysis long before the days of Pregl."

In 1913, when Ramsay retired, Collie was appointed director of the Chemical Laboratories at University College, a position he held until his retirement as emeritus professor in 1928.

Now Collie was endowed with a remarkable versatility. In my days as a young student, he gave me what he called the education of a gentleman. At a series of dinners in his rooms in Camden Grove, he discoursed at length on the beauty of early printing and incunabula, the glories of Chinese lacquer, the grace of Japanese carving and the knowledge and appreciation of vintage clarets, each subject being illustrated by valuable examples.

Collie was also a true æsthete, for beauty wherever he found it made a strong appeal to him. During his investigations with Dr. Patterson on the effect of high potential electric discharges on gases at low temperatures, his great friend the late Sir Herbert Jackson said to him, "Collie, I truly believe that you are far more interested in the colours of the discharge than in the striking phenomena you are recording."

As is well known, Collie was an expert rock climber, but he was also a great mountaineer. He climbed many of the Alps, and in 1901, together with Mummery and Hastings, he attempted the ascent of Nanga Parbat in the Himalaya. In 1902, together with Stutfield, he climbed and explored among the Canadian Rockies, where he discovered the Columbia Group. The first expedition was described in "Climbing in the Himalaya", published in 1902, and the second in "Climbs and Exploration in the Canadian Rockies", published in 1903 under the joint names of Collie and Stutfield. Collie was in turn president of the Scottish Mountaineering Club, the Alpine Club and the Royal Geographical Society.

In 1903 Collie invited me to join a party who proposed to climb in the Lofoten Islands. This party included those other great men of the mountains, James Collier, William Cecil Slingsby and Herman Woolley. Under their tuition I learned the elements of the art, and in the following year Collie invited me to join him at Sligachan in the Isle of Skye. There it was my privilege to meet and later to climb with John McKenzie, the guide and ghillie of the hotel. John was a man of fine personality and under Collie's tuition he became a first-rate rock climber. It is true to say that John worshipped the ground on which Collie trod. Whether it were in walking, fishing or climbing, they were inseparable companions, and to those who knew them both it is singularly fitting that Collie was laid to rest alongside John's grave on the shores of Loch Harport, surrounded by the Mountains of the Mist they loved so well.

E. C. C. BALY.

## Capt. G. T. McCaw, C.M.G., O.B.E.

CAPT. GEORGE TYRRELL MCCAW, who died on October 17, was the editor of the *Empire Survey Review* and one of the foremost and best known authorities on geodesy in the British Empire.

McCaw was born in Lurgan, Co. Armagh, Northern Ireland, in 1870, and, after a distinguished career at Trinity College, Dublin, graduated in arts and engineering in 1893. From 1893 until 1903 he was employed in the Irish Land Valuation Department, but, in 1903, he accepted an offer to join the Geodetic Survey of Rhodesia under the direction of the late Sir David Gill, at that time H.M. Astronomer at the Cape. This work lasted until 1906, after which he was engaged on the survey of the 30th meridian in Uganda, on the measurement of a base line in Sweden, and then in charge of the Trigonometrical Survey of Fiji, his published report on this survey being a model of what such reports should be.

McCaw returned from Fiji in 1917 and very soon afterwards joined the survey and mapping organization of the British Army G.H.Q. in France, where he acted as geodetic adviser connected with the coordination of the triangulation over the whole front. After the War he became technical assistant at the Geographical Section of the General Staff, War Office, and remained there until he retired in 1936. During this period he also acted as joint secretary of the Colonial Survey and Geophysical Committee and of the Air Survey Committee, his work in the former capacity bringing him into touch with surveyors and geodesists from all over the Empire. On several occasions he attended, as one of the British delegates, meetings of the International Union of Geodesy and Geophysics, and he often spoke at meetings of the Royal Geographical Society when technical matters relating to geodesy or survey were under discussion. He was a voluminous writer on geodetic subjects, and in 1931 he became the first editor of the *Empire Survey Review*, a semi-official journal which was founded under the patronage of the Secretary of State for the Colonies, mainly for the dissemination of technical information among the different Colonial survey departments. The high standard with which he launched this *Review* was maintained, in spite of difficulties caused by the War, until the time of his death. He himself, particularly during the War years, wrote a considerable part of each issue, and most of his contributions contained much matter that was original.

In 1924 McCaw was created O.B.E. (Civil Division) and in 1936, in view of his long connexion, both directly and through the Colonial Survey Committee, with survey matters in the Colonies, and the part that he had played in their development, he was made C.M.G.

Considerable as were his intellectual attainments, McCaw will chiefly be remembered by a very large circle of friends all over the world for his great personal charm, which endeared him to all with whom he came in contact. His advice, constantly sought by young and old, by junior and senior, was at the disposal of anyone who cared to ask for it, and, for that reason, most members of the various Colonial survey departments, when at home on leave, were glad to take the opportunity of calling at his office to discuss with him their own difficulties and problems. He was a most entertaining companion and a loyal and generous friend who was utterly incapable of a mean action.

J. CLENDINNING.