Sir Thomas Hudson Middleton, KCIE KBE CB FRS. (1863–1943)

Sir Thomas Hudson Middleton played an important part in the development of agricultural research, education and advisory work which took place in this country from 1894 onwards.

The earliest records of his family's long-standing connections to farming were first recorded with the death of Jonathan Middleton of Tees, near Darlington in 1727. By 1757 his grandson Jonathan had moved to farm in Northumberland followed by two of his sons moving to farm on the Black Isle as tenant farmers on the Cromarty Estate, having been invited by George Ross known as the 'Scotch Agent'.

First William went around 1790, but he died shortly and his brother George followed in 1797. He was then thirty-seven years of age, and though he lived for another thirteen years only the improvements he effected in Cromarty farming were sufficiently remarkable to be recorded long afterwards in the Statistical Account of Scotland (1836):

'*The improved system of agriculture was first acted upon in Cromarty, on a scale sufficiently extensive to render it advantageous, by a Mr George Middleton, a gentleman from England, who settled in the parish about forty years ago. It had been introduced into the place by a spirited proprietor (of whom more anon) nearly twenty years before.*

Mr Middleton erected the first thrashing mill seen in this part of the country, and exported the first wheat; for it is a singular fact, that, forty years ago, there was not a field of this grain reared in the parish, though it now forms the staple of its agriculture, and one of the chief exports of its trade. The difficulties which of late years have borne so heavily on our farmers, have done much towards the general introduction of the modern system.'

George had three sons, one of whom died young while the others took to farming in Ross-shire. Thomas the eldest born in 1800 succeeded to the tenancy of Davidston. He married Eliza Allardyce, a descendant of the Urquhart's of Cromarty, who for generations had been large landowners in Ross-shire. Thomas remained at Davidston and took on tenancy of a few other farms in Easter Ross and the Black Isle, the latter being Rosefarm where his son Alexander Allardyce Middleton moved to tenant around 1856. Alexander married Esther Murray Taylor, daughter of the Rev. Dr Walter Ross Taylor of Thurso and by 1880 they were farming 800 acres of arable land in addition to pasture and outrun. The Middleton's reputation grew and they became highly respected for their farming prowess.

'*I never yet heard of a Middleton, 'whose farming was not celebrated*.'

wrote R. C. Munro-Ferguson

(Royal Society Publishing, E. J. Russell, Obituary of Thomas Hudson Middleton, 1943)

Alexander was not only a busy and prosperous farmer but a leader of his people; he was a J.P., a member of the Parish Council and of the School Board, an active supporter of the Cottage Hospital, an elder of the Free Church and a delegate to the General Assembly. Esther was the daughter of a pastor, a former Moderator of the Free Church of Scotland, and each Sunday held a Sunday School in the kitchen for all the children in 'The Square.' She had also a strong sense of realities and kept the farm accounts clearly and beautifully written.

Their eldest son was Thomas Hudson Middleton who was born at Rosefarm in 1863. Thomas was educated at Merchiston Castle School, Edinburgh, leaving in 1880 at the age of seventeen. He was expected to follow in his father's footsteps, however 1879 had been a hard harvest for British

farming which had opened markets for produce from North America and Canada. The family felt it best that Thomas should follow a career in engineering. He graduated as B.Sc. (Engineering) in 1883, and then, to gain practical experience, went into the works of Messrs Merles, Watson & Co., Glasgow.

Within a few months, however, he was called home due to his father's failing health. He quickly set about introducing laboursaving devices, improving the book-keeping, developing drainage schemes and experimenting with new methods and materials. Such was the satisfaction of his experience that in 1886, when his father returned to farming, Thomas sought and change in Career attending Edinburgh University to study agriculture. His dedication to his studies he went onto win several scholarships and gain the respect of his professors. The Professor of Agriculture, Robert Wallace, described him as

'*a most distinguished student. He possesses the rare qualities of proficiency in the power of acquiring languages, and at the same time a decided aptitude for the study of mathematics. His scientific training leaves nothing to be desired, and his experience in practical agriculture is thorough*'.

(Royal Society Publishing, E. J. Russell, Obituary of Thomas Hudson Middleton, 1943)

He graduated with a B.Sc. (Agriculture) in 1889 and took up a professorship post at a college in the state of Baroda in India. He met Lydia Miller Davidson, daughter of Professor Davidson of Adelaide, and granddaughter of Hugh Miller the geologist: they were married at Poona in 1890.

In 1896 Thomas secured a professorship at University College of Wales, Aberystwyth, where he introduced short courses for farmers sons which proved to be an effective means of advancing agricultural education prior to the advent of the Farm Institutes. He remained at Aberystwyth only three years, and in 1899 became Professor of Agriculture in what was then called the Durham College of Science, Newcastle, now King's College, Durham University.

The college had become known to agriculturists through the Cockle Park experiments begun by William Somerville on the effect of basic slag in improving pasture land. Thomas continued Somerville's work and also encouraged research into diseases of Braxy and Louping-Ill, prevalent amongst sheep. He set up a laboratory in the middle of the affected area under the control of the Professor of Pathology of Aberdeen University. He again looked out for the welfare of his students and never forget any once they had left. One student's comment was as follows:

'*His characteristics, were not such as lend themselves to interesting reminiscences. He had no marked eccentricities, no weaknesses or foibles or mannerisms to be recalled. He just possessed in an unusual degree all the human virtues of a great gentleman and successful teacher: consideration, patience, kindness and a quiet serenity of manner that endeared him to us all.'*

(Royal Society Publishing, E. J. Russell, Obituary of Thomas Hudson Middleton, 1943)

1902 saw Thomas on the move again. This time to a professorship (Draper's Professor) of Agriculture at the University of Cambridge, again following James Somerville who had transferred to the Board of Agriculture. Thomas researched the effects of sowing different mixtures of grass seed on ley ground and recommended that farmers move to a 4- or 5-year duration, which was not popular amongst farmers, who continued with the 1-year Ley that they had been used to. Another development that Thomas was involved with at this time was in connection to potatoes. He demonstrated new techniques of growing, including the need to change to fresh seed potatoes on a

1–2-year basis, the proper use of fertiliser and the value of Bordeaux mixture in controlling blight. Farmers soon recognised the soundness of his practical knowledge, and the value of the help he could give them. They came in numbers to the university farm at Impington and always went away feeling they had earned something of value.

Thomas also recognised the need for the science of agriculture to be taught from an agricultural standpoint by agricultural staff. The pure scientists did not like the idea but gradually they were converted and a small lecturing staff of agricultural scientists were appointed to work on courses which laid the solid foundations of scientific work on which a school could be developed. This also brought a necessity for new laboratories and lecture rooms and with the support of the then Duke of Devonshire, a campaign to raise funds was started which paid for the furnishing of the then new school of Agriculture.

In 1906, Thomas was appointed Assistant Secretary in the Intelligence Division of the Board of Agriculture, again in succession to William Somerville who had now taken the Chair of Rural Economy at Oxford. Thomas continued his policy of keeping close touch with actual farmers and he adopted some new and adventurous methods of doing this in having 'Farmers' at homes' in his office at Whitehall where a farmer could drop in for a cup of tea and a chat. He continued also the leaflets which Somerville had started for the dissemination of technical information among farmers.

Thom as was also responsible for the Plant Diseases and Insect Pests Act of 1907. The Act was passed to prevent the import of plant species from around the world which ultimately introduced diseases in native plants. There was much debate over the necessity of this law in Parliament however, following and devastating failure of fruit crops in 1906 due to the newly introduced disease of American Gooseberry Mildew, the Act was passed in 1907.

In 1909 a new Development Fund was set up which gave Thomas the opportunity of agricultural education, advisory work and research to apply to the whole of the United Kingdom. New National schemes were introduced and for the first-time science could be systematically applied to the problems of agriculture in all parts of the United Kingdom. The setting up of research institutes was not entirely enough for Thomas and he went on to document his ideas:

'*The position as regards the farmers' scientific advisers is, however, different, and for the most part the types still have to be evolved. For the purpose of translating the results of research into successful practice, a highly-trained scientific man is required having a special knowledge of some particular branch of science and a sufficient acquaintance with agriculture to command the respect of skilful and enlightened practical farmers. . . . The first essential is that the specialists to be employed should really be specialists; 'all-round' men would be of no use for the particular purpose in view. The second essential is that the persons who are to be engaged in the work of promoting agriculture should be of the same calibre as those who have advanced arts like medicine and engineering.'*

His vison wasn't to be achieved at this point as the war of 1914 was to put a stop to any further developments in this area.

The war of 1914 brought with it the challenges of food supply with most agriculturalists seeing the need to intensify their present farming methods which would also solve the unemployment and improve the economy. Thomas, however, did not feel the present system was sufficient and set about researching another way. Knowing that the Germans had long been preparing for war so he felt they had already planned a system of agriculture that would ensure self-sufficiency so he set about studying the German system of agriculture comparing it to the systems of the United Kingdom.

The UK system concentrated more on grass and livestock where the German system concentrated more on grain and potatoes. The conclusion was irresistible: food, not financial return, was needed during the war, and the best way of raising the output of food was to convert the grazing land into arable land. Dairy farming had an advantage for protein production, but the Royal Society's Committee on the Food Requirements of the Nation was giving more and more importance to calories, and arriving at the conclusion that an ordinary British dietary supplying the necessary number of calories would almost certainly contain enough protein.

In 1916 the new government established the Food Production Department under the administrative headship of Sir Arthur Lee who put Middleton in charge of the technical side. This was to be his greatest achievement. For the first time he had full scope for all his powers: all his training, his experience and his character fitted in completely with the requirements of the work.

A ploughing-up programme was established with a target of three million acres more tillage land in 1918 than in 1916; County Agricultural Executive Committees were appointed with powers of compulsion and of taking over farms; A Land Drainage Act was obtained to deal with part of the million acres estimated to be unfit for cultivation because of defective drainage; A Women's Land Army was organized, and also a supply of prisoner labour to take the place of men called up; 1,600 government tractors were being worked by the Executive Committees, by the end of the 1918 this number had risen to 4,200. Provision was made for supplies of seeds, fertilizers, machinery; allotments were encouraged; Women's Institutes were set up. A 'Mechanical Advisory Committee' dealt with the many problems perpetually rising in connection with the programme.

The returns for 1918 cultivated land was,960,000 acres and the harvest provided bread for the nation for forty weeks instead of for ten weeks as in the days before the war.

When the war was over Middleton wrote an account of the whole enterprise, **Food Production in War**, which was published in 1923 by the Clarendon Press for the Carnegie Endowment of International Peace. It was by far his most important publication, and one that survived and was utilised again in WW2.

When the Food Production Department was disbanded in 1919, Thomas went on to become the Commissioner of the newly formed Development Commission where he took an active role in fostering the system of agricultural education, research and advisory work allowing farmers to practice good farming. He participated actively in establishing the Rowett Institute for Research in Animal Nutrition, and the Macaulay Institute for Soil Research, both at Aberdeen; and he also encouraged the Scholarship Scheme initiated in 1911 for training staff for the new Research Stations. Thomas also took an active interest in soil surveys, and their development in this country owes a great deal to him.

Thomas had always had an interest in Forestry and since 1909 collected data which in 1919 was used by the development commission to establish the Forestry Commission which came into its own during WW2 when an adequate forestry programme was adopted. He also recognised the importance of a good meteorological service for both agriculture and fisheries, and he helped materially in the development of the Meteorological Office. He was largely responsible for the decision in 1923 to appoint to the Development Commission an Advisory Committee on Animal Diseases and Research which brought together veterinarians and medical men and issued a valuable Report. As a member of the Board of trade he did much to encourage flax production.

From 1926 until 1928 he served on the Royal Commission of Agriculture in India where his wide knowledge succeeded in linking the universities with the agricultural and industrial research institutions.

In 1929 he succeeded Vaughan Nash as Vice-Chairman of the Development Commission where Thomas continued Nash's work in fostering rural industries and developing the communal life of villages. He was also interested in harbour development and fishing investigations and a supporter of the allotment movement where he assisted in establishing the Land Settlement Association. 1931 saw the Agricultural Research Council set up as a counterpart to the Medical Research Council and the Department of Scientific and Industrial Research. As a member Thomas was appointed Chairman in 1938, in succession to Lord Richard Cavendish and he held this office till he died.

His official life was so strenuous he had little time for other occupations. He did however enjoy photography and his rose garden with his greatest interest being the family farm where he would return whenever he took leave. He became the owner of Rosefarm and his brother worked it as a tenant. He had never learned to drive, so in his later years, he would rely on his daughter to drive him North via Durham, where he would photograph the districts of his Durham ancestors and whilst at Rosefarm, he would study the accounts and learn the precise condition of the crops and stocks.

His distinguished services to agriculture were recognized by the Royal Society when he was elected a Fellow in 1936 and subsequently served on the Council in 1940-1941. He was the first recipient of the Gold Medal in 1933 from the Royal Agricultural Society for outstanding services to agriculture, and LL.D. (Honorary Doctorate) of the Universities of Aberdeen, Edinburgh and Wales and D.Sc. of Reading.

Thomas died at his home, Whyte House, Strawberry Vale, Twickenham, in 1943 at the age of eighty.

"*He will be long remembered as a rare combination of the best qualities of farmer, man of science and civil servant; one who devoted all his life to the improvement of agriculture, a man of poise and balance always accessible to his colleagues, friendly and helpful to younger men; a worthy member of the remarkable group of pioneers that agricultural science was fortunate enough to attract when its chance came for development."*

(Royal Society Publishing, E. J. Russell, Obituary of Thomas Hudson Middleton, 1943)

Time Line

Born Rosefarm, Cromarty, 1836

Left Merchiston School, Edinburgh, 1880

Graduated Glasgow University, as B.Sc. (Engineering), 1883

Messrs Mirrlees, Watson & Co, 1883

Rosefarm, Cromarty, 1883-1886

Graduated Edinburgh University, B.Sc. (Agriculture), 1889

Professor in Agriculture, Baroda, India, 1889

Professor at University College of Wales, Aberystwyth, 1896

Professor at Durham College of Science, Newcastle, 1899

Drapes Professor, University of Cambridge, 1902

Assistant Secretary, Intelligence Division of the Board of Agriculture, 1906

Companion, Most Honourable Order of the Bath, C.B., 1913

Technical Advisor, Food Production Department, 1916

Knight Commander of the Most Excellent Order of the British Empire, K.B.E., 1918

Commissioner, Development Commission, 1919

Royal Commission of Agriculture, India 1926-1928

Vice-Chairman, Development Commission 1929

Knight Commander of the Order of the Indian Empire, K.C.I.E., 1929

Fellowship of the Royal Society, F.R.S., 1936

Chairman, The Agricultural Research Council, 1938

Died, 1943