

New Zealand Society of Animal Production online archive

This paper is from the New Zealand Society for Animal Production online archive. NZSAP holds a regular annual conference in June or July each year for the presentation of technical and applied topics in animal production. NZSAP plays an important role as a forum fostering research in all areas of animal production including production systems, nutrition, meat science, animal welfare, wool science, animal breeding and genetics.

An invitation is extended to all those involved in the field of animal production to apply for membership of the New Zealand Society of Animal Production at our website www.nzsap.org.nz

[View All Proceedings](#)

[Next Conference](#)

[Join NZSAP](#)

The New Zealand Society of Animal Production in publishing the conference proceedings is engaged in disseminating information, not rendering professional advice or services. The views expressed herein do not necessarily represent the views of the New Zealand Society of Animal Production and the New Zealand Society of Animal Production expressly disclaims any form of liability with respect to anything done or omitted to be done in reliance upon the contents of these proceedings.

This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/).



You are free to:

Share— copy and redistribute the material in any medium or format

Under the following terms:

Attribution — You must give [appropriate credit](#), provide a link to the license, and [indicate if changes were made](#). You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

NonCommercial — You may not use the material for [commercial purposes](#).

NoDerivatives — If you [remix, transform, or build upon](#) the material, you may not distribute the modified material.

<http://creativecommons.org.nz/licences/licences-explained/>

are known which are isotopes of the 90 odd chemically distinguishable elements.

With this new material a greatly increased volume of work can be accomplished. The processes of intermediary metabolism, previously referred to, can be studied in more detail. Effort need not be restricted to normal plants or animals for abnormalities are also of interest. Information on disease processes or on low-producing animals might be turned to account in avoiding or preventing these conditions. Definitely the availability of radio-active isotopes opens a new era for the science of nutrition.

I have attempted to show that progress in the knowledge of nutrition has been made in a series of major steps each traceable to some advance occurring in a contemporary science. The small seedling first raised by the early Greek physicians has been nourished by chemical science, physiology, biology and physical science. Appropriately, since the science of nutrition has primarily a biological application, the greatest contribution to its growth has been made by biology. But contributions from other sciences have been none the less indispensable to the full flowering of the plant.

In like manner the problems of this society must yield more readily to the composite approach its varied membership provides.

MEMORIAL ADDRESS - ALFRED HYDE COCKAYNE

by

E. B. Levy, Grasslands Division, Palmerston North.

At this 1947 Animal Production Society's Conference, where the main theme is grasslands and the animal, there is perhaps no more opportune time to eulogise Alfred Hyde Cockayne whose main real life-work has been grassland production and its conversion into animal products.

Born in 1880 of a quiet, unassuming, patient, self-sacrificing but very son-proud mother, Maude Cockayne, and son of an illustrious father, Dr. Leonard Cockayne, he was reared in an atmosphere of the growing plants, in their specific and peculiar growing place. Plant Ecology in its fullest and widest sense, agriculturally, was established as a science in New Zealand by A.H.C. and his venerable father; the latter in the indigenous plant world and the former in the great exotics that form the backbone of our Agriculture.

Nor was it to the plant world alone that A.H.C. confined his attention. His versatile and critical mind applied itself with zeal to plant and animal, and, with an almost uncanny instinct, rapidly sifted essentials from unessentials, retaining the former and inspiring into others the urge to research to place his intuitive conclusions on an unassailable statistical basis. Very few major agricultural developments missed the scrutiny and impelling genius of A.H.C. Grasslands, crops, plant diseases, weeds, timbers, the feeding of the dairy cow, sheep and wool and wool structure, pigs and poultry, all in turn received his critical attention much of which is summed up in one or other of the 128 papers he has contributed to botanical and agricultural knowledge.

Nor did his activities stop at research. His lifetime work was based on the assumption that Research and Agricultural Instruction were two great foundation stones in the building of a permanent and imposing agricultural edifice.

During his career he built up perhaps the best agricultural extension service ever seen in New Zealand and one that will stand comparison in its simplicity and efficiency with any agricultural extensive service in the world. He saw the impinge of two world wars on agriculture and during the last war particularly was entrusted with very great powers and responsibilities. In 1939 at the onset of war

he became the Primary Industries Controller. In 1941 he was Chairman of the Primary Production Council; he was a member of the War Emergency Supply Council and had direct supervision of Vegetable Production for the feeding of the Army in the Pacific and the rationing of fertilisers.

The story of combined pastoral research and its extension to the field of agriculture is the life-story of A.H.C.

When 19 years of age he attended Canterbury University College and became Assistant Demonstrator in Biology under Dr. Dendy, from whence in 1904 he was appointed to the Dept. of Agriculture as Assistant Biologist to the Horticultural Division. At that time Cockayne's implied determination was to institute a scientific and research organisation to serve, not only Horticulture but all the other extensive activities of the Dept. of Agriculture. Thus in 1909 we see A.H.C. appointed Biologist of a self-contained unit having under its ken most living things, from the microscopic bacteria and fungi, to insects and the higher plants.

I well remember the unit some two years later when I joined up with the Dept. of Agriculture as a clerical cadet in the Head Office in 1911. The unit then consisted of two rooms, one the general laboratory and office, dissected into bays by filing and specimen cabinet intrusions into the room, and at the far end a small back room occupied by A.H.C. The nucleus of the modern seed-testing station was there in a series of shelves built into a window recess at one side of the room. Close to this incubator, at a bench in front, worked Richard Waters alongside a huge water trough that was used for the washing of specimens and, incidentally, to receive the expectorations of certain workers. Hence this box came to be known as the gob-box. On the right was Percy Cubit, the clerk and general assistant who later, in 1912, I replaced. Esmond Atkinson, botanist and artist completed the personnel of the unit. The characteristic atmosphere of the place was a diligent, unofficious freeness, that characterised the whole of A.H.C.'s administration, drawing out rather than impelling loyalty and originality in workers privileged to come under his ken. A freeness, however, at the time I speak sometimes led to chaotic conditions of typing, plant specimens, artistry, drafts of answered and unanswered correspondence, periodically geared up to terrific activity in a general clean up when lost things became hopelessly "lost", or were found. Darts spasmodically punctuated the daily routine, but there was no 40-hour week in the laboratory in those days - a building up of a unit had begun which to-day has blossomed out into some eight separate and specialised research units, together with a fields Instruction service second to none in the agricultural world.

The original unit of the Biological Laboratory was located first in the upper storey of the Custom House on the waterfront. Later it was transferred to the Union Steamship Company building where again the unit consisted of two rooms. Here the window recess seed-testing chamber was replaced by glass cabinets, heated electrically by radiators that frequently got out of order and just as frequently livened the switches and environs with power that frequently shocked the operator and the charwoman, resulting in a strike of the latter. Mr. Waters was promoted to mycological work and I took over the seed-testing assisted by one Hetty Jensen. Archie Robinson, later killed in action in the Great War I, replaced me as clerk.

The sojourn in the Union Steamship Company building lasted approximately 2 years when the unit made a third move into the Dominion Farmers' Institute building and while there there was hatched a great plan that had it been pursued and had there been no war between 1914-1918 would have changed the role and venue of Agricultural College Education in the North Island and the home of Plant and possible Animal Research.

At this time John Brown was Director of the Fields Division and in collaboration with A.H.C. and the then Secretary of Agriculture, Mr. F.S. Pope, conceived the plan to set up a central Development Farm at which could be assembled all agricultural research, where men could

be trained, and from whence could radiate new and approved facts.

This farm then was to become the home and headquarters of the Fields Division, of Agricultural Research, and a training ground for Research and Extension service officers.

Apart from research Cockayne's great ambition at that time was to train staff for the multifarious duties of the Dept. of Agriculture. A lecturing staff, under the Fields Division, was appointed and these were to be assisted by specialised officers of the Biological Laboratory. The farm was to become affiliated to the Victoria University College and some subjects at least were to be taken there towards the Science Degree. Classes were set up, and one at least of the University Professors, Dr. Cotton, Professor in Geology, dealt for some time with his pet subject, Geomorphology. Well I remember the small lecture room - actually the dark room - and the methylated spirit lamp in the projector that created an atmosphere one could feel, rather than see, the rugged land forms portrayed on the doubtfully white screen.

In 1917 the Central Development Farm was born at Levin, the high sounding and promising title replacing that of the Weraroa Experimental Farm.

The Biological Laboratory and the whole of the Fields Division shifted to Levin in 1917, A.H.C. and John Brown being in close collusion, but both units still remained separate entities.

The Biological Laboratory there consisted of two buildings - one of 3 rooms, the main one devoted now entirely to seed-testing, a second room to Botany and the third, the Director's Office. Across the roadway were two more rooms one under R. Waters who had specialised in Plant Pathology, and the other was occupied by David Miller, Entomologist.

The plant pathology staff was later increased by the advent of G.H. Cunningham and later still by Jock Neil whilst my seed-testing staff was increased and consisted of 3 female assistants and myself. The unit at this stage boasted a bab. boy for cleaning and general lab work; Mr. Nelson Foy, later to assume control of seed-testing, was clerk, assisted by a typiste. W.D. Reid later joined up with the unit.

Cockayne, now had a staff of 42 and as opportunity offered he and I delved more and more into grassland research. Dr. L. Cockayne knew and loved the original forests and vegetation that covered N.Z. In his day, and that of his son, was seen the almost total reduction of the forest cover to stumps, logs and ashes, with grass sown to spring up everywhere to replace that forest.

A.H.C. from his initiation to the service in 1909 studied that transformation, seeing in many instances successful replacement, in others only partial success and in others dismal failure. His advice became sought on the important question of seed-mixtures with which to sow the forest burns and how to graze-manage successfully those burns to swing the ecological balance in favour of grass rather than of secondary growth. I tramped the hills and fields on many an occasion with A.H.C. He walked long and at a prodigious rate. I well remember having spent a full day in Taranaki over several farms to be driven home by A.H.C. in an old T Ford when at midnight, exactly, on the Himitangi Road a fog developed and A.H.C. hesitated between taking the road and the railway line with the result that we hit a pile of sleepers between the two. We seized several bags and my large $\frac{1}{2}$ plate camera and set off for Levin, 21 miles away. We arrived there at 6.30 a.m. having walked every step of the way with A.H.C. still well in the lead.

During these years I became his ardent pupil. We studied together the grasslands of New Zealand. He the tutor, wise philosopher and kind friend.

For 3 years the Central Development Farm thrived, declined and failed. Cockayne's dream of a University affiliated College farm was dispelled. His love of the soil and of the need for a close contact with it and with the practical problems associated with that close contact came to nought.

The grandiose scheme to train research and extension officers collapsed and the students were dispersed, most of them getting away to the War, later to return and take up work with the Fields Division with Agricultural High Schools, or to go farming.

The war and the slump of the early 1920's ended the chequered career of the C.D.F. and both the Fields Division administrative and the Biological Laboratory under A.H.C. returned to Wellington, the C.D.F. later being cut up and sold to returned soldiers. A factor in this transfer of the Biological Laboratory back to Wellington was the insistent demand for academic qualification of its research officers. With the collapse of the C.D.F. went any chance of University Status so the only course was for a return to a University centre.

In 1920 we returned to Wellington where a two storey dwelling house was taken over in Kelburn and converted to laboratories and offices. From this point it can be said that specialisation set in within the unit. University degree courses were taken by all Senior Staff and for the most part degrees were obtained.

The generalised and wide knowledge on all biological aspects that A.H.C. possessed in surprising detail gave way within the unit to particularised, more exact and new knowledge that his subordinates had by now acquired and exhibited at this time. A.H.C. still remained the greatest and soundest critic in all specialised aspects of the growing scope of the unit as well as on the generalised extension aspect. Well I remember at this time feelings of great inspiration after experiencing the privilege and joy of frequent lone discussions with A.H.C. on questions of extending grassland research.

Perhaps at this stage the fervour, enthusiasm and specialisation of his staff might have caused grave misgivings in the heart of A.H.C. and at times I feel, we all who specialised, were often unkind in lauding ourselves superior in our narrow sphere of work to the man who had coaxed, encouraged, guided and made the way easy for us to specialise. He saw slipping from his grasp the chance to write and publish the wealth of generalised knowledge he possessed. The mantle had passed from him to his various satellites, I am afraid unappreciated by some of us.

In 1923 A.H.C. was appointed Director of the Fields Division and his official association with the Biological Laboratory ceased until 1928. Between 1923 and 1928 A.H.C. concentrated on the building up of the Extension service of the Fields Division which at that time was at a low ebb. He strengthened the staff and freed the Division of all policing and inspection work. Questions of Noxious Weeds, inspection and the administrative control of rabbits were handed over to the Live-Stock Division, a shrewd move for it ridded the Instructional service of many a black look and threat and transferred these over to the Live-Stock Division. This Division has borne the stigma ever since but the transfer did create a farm advisory service where its officers were welcomed on the farm and soon became the fast friend and guide of the farmer.

That Agricultural Extension Service was not built in a day nor without great personal effort on the part of A.H.C. and his specialised staff. Well I remember farm school after farm school, the masses of cyclostyled lecture literature, lantern slides, etc., that formed the basis of those excellent farmer and Instructional staff meetings. He coaxed and goaded lecturers into activity sometimes with surprising results.

During this 1923-1928 period there was uppermost in Cockayne's mind the urge to get his administrative Division and his estranged re-

search units out of the town with its stultifying influence and political domination: to get into the country side again where adequate research facilities could be provided and where the impact of his Division could be made direct into the arterial system of the agriculture he loved to serve.

Once again the Fields Division, and the research units of the old Biological Laboratory were brought together under a closer liaison than ever before. A.H.C. now took the dual role of Director of the Fields Division and Plant Research Station. At this time the seed-testing station was set up as a separate unit within the framework of the new organisation, and land was acquired for the plant research Divisions in close proximity to Massey Agricultural College which came into being at about this time. Thus the old Biological Laboratory changed its name to the Plant Research Station, later to be known as separate Divisions under the Plant Research Bureau. The station at this time consisted of eight distinct Research Divisions, each with its own officer in charge, thus: (1) Agronomy and pasture and crops seed certification (J. Hadfield); (2) Crop Experimentation and Technique of Experimental Work (A.W. Hudson); (3) Grasslands (E. Bruce Levy); (4) Plant Mycology (G.H. Cunningham); (5) Entomology (Muggeridge); (6) Systematic Botany (H.H. Allan); (7) Seed-Testing Station (Nelson R. Foy), and (8) Chemical Laboratory (B. Doak). So close was the collaboration with the Fields Division that all clerical services were given by that Division. A 9th Division, that of Agricultural Economics was also in being (E.J. Fawcett) but this Division never shifted to Palmerston North but stayed in Wellington as a liaison section between the Fields Division and Head Office. It went the way of all flesh, the research being sacrificed to more highly paid administrative callings.

A.H.C. held the joint position as Director of the Fields Division and Plant Research Station for one year, and then befell the greatest tragedy that ever beset agricultural research in New Zealand. Cockayne was a born research man and was peculiarly endowed to lead research and to infuse enthusiasm in his specialised staff. The story of insufficient inducement by way of salary and scope to fulfil and carry out those research projects led Cockayne largely to forsake research and to look towards the more highly paid administrative work of the Dept. of Agriculture. He became Assistant Director General of Agriculture in 1929 and on the retirement of Dr. C.J. Reakes was appointed to the office of Director General of Agriculture in 1936.

During his office, however, as Assistant Director General, located in Wellington, he retained also the old role of Director of Plant Research Station which, however, became untenable and ineffective on account of distant-control and lack of personal contact.

However, A.H.C. was determined to still be a factor in research. About this time the Dept. of Scientific and Industrial Research was set up. There loomed in the great mind of A.H.C. another dream. He saw all research centred in a Department whose one and only function was to serve and promote research. Let us take all agricultural research from amid the trammellings of the generalised and routine Dept. of Agriculture and place it in the S. & I.R. Dept., under a general Research Council that would advise the Government of the day and foster all research in the one Department! Hence was born the Plant Research Bureau under the wing of the Dept. of S. & I.R. with A.H.C. as Chairman of the Plant Research Bureau Committee, and a member of the Research Council.

So far so good, but there came to A.H.C.'s grandiose scheme a rude shock when strong undercurrents within the Dept. of Agriculture undermined the research structure he was building, retaining in Agriculture a strong Division of Animal Research, later to be augmented by Soil Fertility Research and other projected researches, leaving Plant Research high and dry in an entirely separate and alien Department, divorced from the great agricultural organisation it was created to serve. That divorce may yet prove one of the greatest tragedies to the fulfilment and full expression of the enormous latent possibilities in research provided the fruits of research pass quickly and easily.