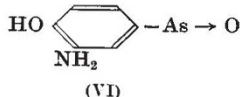
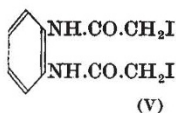


In this case the effect was to produce 'stickiness' after a few hours, and at periods of 24-48 hours after treatment, anaphase bridges with and without accompanying fragments: no fragmentation was observed except in association with bridges.



The above suggestions as to the mechanism of action of the nitrogen mustards are put forward purely as a working hypothesis, and as possibly the simplest of a number of alternative explanations consistent with the chemical and cytological data. If, however, it is indeed true that chemical substances of these kinds produce some of their characteristic effects by reacting directly with the uncoiled resting chromosomes in the manner described, a new approach will become available to the related problems of growth inhibition, induced mutation and carcinogenesis. The connexion between these phenomena is now receiving further emphasis from the fact that tumour induction by the nitrogen mustards has recently been achieved both in the aliphatic series<sup>20</sup>, and in the aromatic series<sup>21</sup>. Further reports upon this last subject will be published elsewhere.

The authors wish to express their indebtedness to Prof. A. Haddow for much advice and encouragement. The investigation upon which this discussion is based has been supported by grants made to the Chester Beatty Research Institute by the British Empire Cancer Campaign, the Jane Coffin Childs Memorial Fund for Medical Research, the Anna Fuller Fund, and the Division of Research Grants of the U.S. Public Health Service, and is being conducted during the tenure by one of the authors (W. C. J. R.) of a Sir Halley Stewart Fellowship, and by another (R. J. G.) of a grant from the Forsyth Bequest of the Royal Society.

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## OBITUARIES

Sir Thomas Hill Easterfield, K.B.E.

SIR THOMAS HILL EASTERFIELD died at Nelson, New Zealand, on March 19, aged eighty-three, and on March 18 his ashes were scattered in a garden nook at the Cawthron Institute. He was born at Doncaster, Yorkshire, in 1866, received his primary education at the Doncaster Grammar School, and later entered the Yorkshire College (now University of Leeds), where he won a scholarship in geology and gained his first insight into chemical research, which inspired his life-work. From Leeds he proceeded to Cambridge as a foundation scholar of Clare College and gained first-class honours in the Natural Sciences Tripos; this was followed by studies at the Zurich Polytechnic School and at Würzburg. In 1888 he returned to Cambridge as a junior demonstrator in the University Chemical Laboratory, becoming a University extension lecturer in 1891, and in 1894 lecturer on pharmaceutical chemistry and chemistry of sanitary science; he was also a master at the Perse School.

In 1899 Easterfield was appointed one of the four foundation professors of the Victoria University College, Wellington, New Zealand. He held the dual chair of chemistry and physics until 1909, continuing as professor of chemistry until 1920, when he became the first director of the Cawthron Institute, Nelson, from which position he retired in 1933 after a full and active professional career. In 1938 he was honoured by knighthood in recognition of his outstanding services.

Apart from his scholastic attainments, Easterfield was a Cambridge 'miler' and took an active part in athletics. Further, as a churchman he was imbued with, and practised, the principles of Christianity which moulded his outlook and guided his footsteps. Such was this distinguished citizen who carried with him a strong sense of justice, a keenly developed flair for research, and the experienced technique of an able teacher, all of which traits left their mark on the many who had the good fortune to come under his influence.

Though Sir Thomas Easterfield will ever be remembered as an outstanding chemist who created from virtually nothing—much of the equipment was of his own making—the Department of Chemistry at Victoria College, Wellington, successfully fathering such an undertaking through all vicissitudes, it must be stressed that his scientific horizon was by no means limited by chemistry; he possessed a wide understanding of both physical and biological sciences. He held the unshakable belief that fundamental research is the prime factor in scientific advancement; he held an equally strong belief in the necessity for the application of science. It was this broad and tolerant outlook which so fitted him to direct, from their infancy, those physical and biological researches, both fundamental and technical, which, through his foresight and ability, caused the Cawthron Institute to develop so rapidly to a high standing among research organisations.

DAVID MILLER

G. M. Mathews

GREGOR MACALISTER MATHEWS, author of "Birds of Australia", died at Winchester after a short illness on March 27. He was the son of R. H. Mathews, a well-known authority on Australian aborigines, and

was born at Biamble, New South Wales, on September 10, 1876. After attending King's School, Parramatta, he worked on a cattle station in north Queensland and spent much of his spare time studying birds. He amassed a large collection, supplemented by many specimens received from correspondents all over Australia. For long he had planned to write a work on Australian birds, and in 1902 went to England for the purpose. At first he resided near Watford, which was convenient for the British Museum (Natural History) and Lord Rothschild's museum at Tring, where much of his work was done.

As a preliminary to his larger work, he published in the *Emu* during 1908 a "Handlist of the Birds of Australia"; then in 1912 the "Birds of Australia" began to appear, and this was finally completed in 1927 in twelve thick folio volumes. His next work was a check list of the birds of Australia and the Polynesian region, entitled "A Systema Avium Australasianarum", brought out under the auspices of the British Ornithologists' Union. Mathews had long been interested in two small islands lying between Australia and New Zealand, and in 1928 he published an account of the birds entitled "Birds of Norfolk and Lord Howe Islands", followed eight years later by a supplement.

In his earlier works he was an extreme 'splitter', and a large number of his races are not now recognized. In genera, too, he went to the same extreme, and this to a great extent was due to his confining his

studies to Australian species only. In recent years, however, he greatly modified his views. He was greatly interested in nomenclature and the study of early writers on Australian birds, and his best work was done in this connexion. Between 1912 and 1927 he edited a magazine of his own, *Austral Avian Record*, which contained much useful information. But by far the most important of his publications was the "Bibliography of the Birds of Australia", which appeared in 1925 as a supplementary volume to "Birds of Australia". This is more than a bibliography, and might be considered the foundation for a history of the study of birds in Australia.

Mathews was a great collector of books and amassed the finest collection of works dealing with Australian birds. This he presented to the Australian Government in 1929, and it is now housed in the National Library in Canberra as the Mathews Ornithological Library. His collection of birds passed into the hands of the late Lord Rothschild and is now in the American Museum of Natural History in New York.

Mathews was a keen sportsman, interested in both hunting and shooting, and while engaged in his ornithological studies travelled widely, visiting most of the more important museums both in Europe and the United States. In 1924 he was vice-president of the British Ornithologists' Union and during 1936-38 was chairman of the British Ornithologists' Club. He married Marian, daughter of H. C. White, of Mudgee, New South Wales, who died in 1938, and is survived by a son.  
N. B. K.

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## NEWS and VIEWS

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Zoology at King's College, London:

Dr. J. F. Danielli

DR. DANIELLI who is succeeding Prof. MacKinnon as professor of zoology in King's College, London, commenced research work in 1931 at University College under the direction of Prof. N. K. Adam. He was then working on monolayers of steroids and on cell permeability. In 1933 he went to Princeton University with a Commonwealth Foundation Fellowship and continued his work under the influence of Prof. E. N. Harvey and Prof. C. G. Conklin. He returned to University College, London, under the auspices of Sir Jack Drummond and Prof. A. V. Hill. From University College he went to Cambridge in 1938, with a Beit Memorial Medical Research Fellowship tenable in the Department of Biochemistry. Here his work was extended to the blood capillaries. He became a member of a Ministry of Supply extra-mural chemical defence research team and a fellow of St. John's College in 1942. During his later years in Cambridge he was attached to both the Departments of Zoology and Biochemistry, and his main attention was turned to cytochemistry. In 1946 he went to the laboratory of the Marine Biological Association as physiologist, and then became reader in cell physiology of the University of London at the Chester Beatty Research Institute of the Royal Cancer Hospital, and also honorary lecturer in pharmacology at University College. He plans to continue the programme developed at the Royal Cancer Hospital, and to develop research work in cytology particularly in collaboration with Prof. T. A. Bennet Clark and Prof. J. T. Randall.

Geography at Cambridge:

Mr. J. A. Steers

MR. J. A. STEERS, who, in September, is to succeed Prof. F. Debenham as professor of geography in the University of Cambridge, was one of the first generation of geographers to take the newly constituted Geographical Tripos after the First World War. After a short spell of teaching at Framlingham, Mr. Steers returned to Cambridge to join the staff of the Geographical Department under Philip Lake. His College elected him to a fellowship, and before many years St. Catharine's became the first men's college to offer scholarships in geography. This led to a remarkable concentration of able geographical students in the College, which has resulted in a rapidly lengthening list of St. Catharine's geographers entering university posts—fifteen in the last ten years. In his College, Mr. Steers has served successively as dean, tutor, senior tutor, and president.

The Norfolk coast was the scene of Mr. Steers' early researches, and his frequent visits led to Norfolk replacing his own native Bedfordshire as his favourite county. These activities centred mainly on Scolt Head Island, where for many years parties of Cambridge men mixed the more sober academic pursuits with strenuous bursts of bathing and creek jumping. His taste for coastal problems led him to other parts of Britain, and culminated in two expeditions to the Great Barrier Reefs of Queensland, and one to Jamaica. A succession of papers followed promptly on various aspects of the physiography of coral reefs—the main work of writing up was sometimes accomplished on board the ship while returning to England. During the Second World War his love of the coastline led him to turn his attention to the