

### Chemical Carcinogenesis and Molecular Biology

By Pascaline Daudel and Raymond Daudel. Pp. 158. (New York and London: Interscience Publishers, a Division of John Wiley and Sons, 1966.) 53s.

In spite of the recent and, in some respects, more detailed book by Clayson on chemical carcinogenesis, this book will be welcomed by biologists. The title is somewhat optimistic as there is still no good tie-up between the understanding of the chemical structure and biochemistry of carcinogens, and the basic molecular biological phenomena. The twelve chapters cover the field briefly but clearly, each containing a useful list of references. Some of the conclusions are less cautious than ideal; for example, the fact that more skin papillomata appear if the carcinogen is given near midnight, and the fact that mitotic frequency in the skin is lower at midnight than at noon; these two observations do not suggest that carcinogens act primarily on cells which are synthesizing DNA. Generally, a more critical approach to the literature would have been useful.

The translation retains some gallicisms: "sensibility" instead of "sensitivity", "works" of this kind instead of "experiments"; and it is a pity that in the text the letter "l" and the number "1" are sometimes indistinguishable. This may confuse those not expert in the particular field discussed. There are some spelling mistakes, and minor points which might irritate the experts (for example, sulfoxyalkanes and nitrosamines are classed together), but this readable little book will be useful for students and biologists interested in the complex field of chemical carcinogenesis.

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ment. He was the president of the Migraine Trust, set up last year to finance a programme of research into this disorder, as well as being chairman of the Standing Committee on Drug Addiction, and a member of, among others, the Royal Commission on Marriage and Divorce and the Law Relating to Mental Illness. He had been president of the Royal College of Physicians and the British Association, and was active in the House of Lords; in the committee stage of the Abortion Bill he moved two amendments which were accepted. One amendment replaced as a ground for abortion the possible birth of a child with no prospect of reasonable enjoyment of life with the possible birth of a child with a serious mental or physical handicap. He remarked that the prospect of reasonable enjoyment of life is not something which a doctor can calculate.

### Professor F. E. Ray

DR. FRANCIS E. RAY, aged 68, research professor in pharmaceutical chemistry at the University of Florida in Gainesville, died on November 25 in Hong Kong while he was on a world tour before going to the ninth International Cancer Congress in Tokyo.

Ray obtained his B.Sc. and D.Sc. with Professor Chattaway from the University of Oxford, when he was a Rhodes scholar, and Professor W. A. Noyes supervised his M.S. thesis at the University of Illinois. Ray was a member of the faculty of the University of Cincinnati for many years, and he and his students were pioneers in the preparation of isotopically labelled organic compounds for cancer research when he was the director of the Laboratory of Radiochemistry. In 1949 Ray was appointed director of the Cancer Research Laboratory at the University of Florida, and in 1960 he assumed his last position.

Ray, early in his career, discovered the sulphonium equilibrium and wrote an authoritative review with G. Rieveschl on the chemistry of the polynuclear hydrocarbon fluorene. This proved to be the starting point for Ray's interest in the carcinogenic derivatives of this hydrocarbon, a field in which he and his students made many important discoveries. Thus, his name is associated with new derivatives of the carcinogen 2-acetylamino-fluorene; with the induction of adenocarcinoma of the glandular stomach in rats by means of 2,7-diacetylamino-fluorene; with the production of minimal deviation hepatomas with *N*-2-fluorenylphthalamic acid, and with the preparation of pharmaceutical products labelled with chlorine-36 and sulphur-35 for metabolic investigations.

Ray was the author of four text-books on experimental, general and organic chemistry which were at one time adopted by many of the major universities in the United States. He was an active member of many learned societies, among them the American Association for Cancer Research, the American Chemical Society, the Society of Nuclear Medicine, the Society for Experimental Biology and Medicine, Sigma Xi, and he was a fellow of the Ohio, the Florida, and the Iowa Academies of Science. He served on a panel on carcinogenesis of the International Union Against Cancer, and as director of the Florida Division of the American Cancer Society and as a member of its Research Committee. He was a consultant to the Medical Division of the Oak Ridge Institute of Nuclear Studies. Ray was an authority on the chemical causes of cancer and he testified on this subject before a committee of the U.S. House of Representatives.

To his students and associates, Ray was more than a teacher; he had a curiosity to delve into the unknown, to read and follow the literature on a broad basis, and the wisdom to develop concepts and ideas based on and guided by experimental facts. Ray loved music not only as a listener; he played the flute in the Civic Orchestra of Cincinnati and the University Orchestra in Gainesville. He liked poetry and expressed his talent for form as a photographer. He was proud of the tropical plants in his garden in Florida.

JOHN H. WEISBURGER

## OBITUARIES

### Lord Brain

LORD BRAIN, who died on December 29, aged 71, was neurologist, philosopher and writer.

Walter Russell Brain was educated at Mill Hill School and at Oxford, where his teachers included Sir Julian Huxley, J. B. S. Haldane and Sir Charles Sherrington. His major hospital appointments, until his retirement in 1960, were at the London Hospital, where he was a general and consulting physician, and at the Maida Vale Hospital for Nervous Diseases. From 1924 he was engaged in research, in addition to his practice as a neurological physician, and he published numerous original papers.

At the London Ophthalmic Hospital (Moorfields) he became interested in the ocular symptoms of thyroid disorders, especially exophthalmos, and he described the syndrome exophthalmic ophthalmoplegia—a condition which involves paralysis of the muscles of the eye. In his later clinical neurological work, Brain was particularly interested in carcinomatous neuropathy—the relation between cancer and degenerative changes in the nervous system. He was involved in surveys of patients with cancer, which have shown that there is a connexion between the incidence of cancer and of neurological disorders such as motor neurone disease (amyotrophic lateral sclerosis). He also investigated disorders of the joints of the neck and of the spinal cord as a cause of neurological symptoms. He was an authority on disorders of speech, about which he wrote one of his books, and on neurological disturbances after damage to the major hemisphere of the brain.

Lord Brain, who was a Quaker, was always interested in philosophy, and particularly in the relation between the brain and the mind in perception. In the Linacre lecture, delivered at Cambridge in May 1965, he described perception, in neurophysiological terms, as a method of conveying information to the brain. He also applied his specialized knowledge to literature, which with philosophy was his main pleasure apart from work, and to the many public offices which he held, particularly after his retire-