by Dr. Curt P. Wimmer; "Some Observations on the Cardiac Tonic Drugs Apocynum and Convallaria," by Dr. Heber W. Youngken; "Some Factors that Influence Endocrine Reactions," by Drs. E. L. Schwabe and E. E. Emery; "The Assay of Thyrotropic Hormone," by Drs. A. S. Cook and C. M. Hayes; and "Electro-osmosis, its Applications, and the Latest Discoveries Concerning the Penetration of Drugs in Living Tissues and in Heart Substances," by Dr. Louis C. Barail.

Section on Agriculture (O) and Affiliated Societies. The section as such will present no programs, but its affiliated societies, the Society of American Foresters and the Canadian Society of Forestry Engineers, will hold joint meetings on Monday, Tuesday, Wednesday and Thursday. The program on Monday afternoon, under the chairmanship of Professor J. Miles Gibson, will discuss "Administration of Crown Lands in Canada." The general subject of discussion on Tuesday morning, under the chairmanship of Dr. C. F. Korstian, is "Silviculture in Pulpwood Operations." On Wednesday morning these societies will hold a joint session with Forest Entomologists and Forest Pathologists, under the chairmanship of Dr. J. M. Swaine. On Thursday morning the societies join the Ecological Society of America in a symposium on "Fire and its Biological Implications." On Friday and Saturday the societies will make an excursion to Petawawa Forest Experiment Station (125 miles).

The Canadian Society of Technical Agriculturists will hold business sessions on Monday and will present scientific programs on Tuesday, Wednesday and Thursday. On Tuesday morning the Soils Group, under the chairmanship of Dr. J. Mitchell, will present a program of six papers. On Tuesday afternoon the Horticultural Group, under the chairmanship of Dr. C. F. Patterson, will present a program of nine papers. On Wednesday morning the Horticultural Group, under the chairmanship of Dr. M. B. Davis, will present a program of six papers. And also on Wednesday morning the Soils Group, under the chairmanship of Dr. L. E. Wright, will present a program of seven papers; and on Thursday morning a program of two papers and a round-table discussion on "Laboratory Methods and Technique in Soil Research with Special Reference to Standard Determinations in Connection with Soil Survey Samples."

The Agricultural Economics Group of the Canadian Society of Technical Agriculturists is planning a program in connection with the Section on Social and Economic Sciences (K).

The Animal Industry Group on Tuesday afternoon will present a program, under the chairmanship of Dr. A. R. Ness, of eight papers.

The Plant Industry Group is planning a program in cooperation with the Canadian Phytopathological Society and the Section on Botanical Sciences (G).

The American Society of Agronomy is holding joint meetings with the American and Canadian Committee on Pasture Improvement and participates in a round-table conference on "Comparison of the Nutritive Value of Pasture and Hay with Other Crops."

Section on Education (Q). The section will hold general sessions on Tuesday and Wednesday. The first to be held on Tuesday morning will consist largely of papers on organizational and administrative problems in Canadian education. The second on Tuesday afternoon will be a joint session with the Section on Psychology (I) devoted largely to child study and the psychological aspects of education.

There will be two round-table discussions, the first, to be held on Wednesday morning under the chairmanship of Dr. V. K. Greer, will be on "Problems of the Curriculum of Elementary Schools." The second, to be held on Wednesday afternoon under the chairmanship of Major H. B. King, will be on "Problems of the Curriculum of Secondary Schools." At noon on Tuesday there will be a luncheon which will be followed by a discussion of and preliminary plans for the establishment of a Dominion Bureau of Research. This discussion will be under the chairmanship of Dr. Henry F. Munro, president of the Canadian Educational Association and superintendent of education for Nova Scotia. On Wednesday evening there will be a joint dinner with the Section on Psychology, which will be followed by reports on "The Scientific Study of the Education of the Dionne Quintuplets." This discussion is under the chairmanship of Dr. Edward A. Bott, of the University of Toronto.

OBITUARY

MAURICE CROWTHER HALL

By the death of Dr. Maurice Crowther Hall on May 1, 1938, the National Institute of Health of the U. S. Public Health Service lost a competent research scientist and administrator; parasitologists the world over lost one of their best-known and highly regarded colleagues; and the veterinary profession of the United States lost one of its most distinguished members. Dr. Hall's death followed an operation for gastric ulcers from which he had suffered for about twenty years. That he was able to carry on his administrative and scientific work despite this serious handicap is evidence of an indomitable will and a resolute determination to pursue his work in the face of a devitalizing disease to which he finally succumbed.

Dr. Hall was born in Golden, Colorado, on July 15,

1881. He was of English stock and the son of a man to whom he always referred affectionately as a "pioneer." From his father he inherited the pioneering instinct which found expression in much of his scientific work, and from his early environment in the West he imbibed a freshness of spirit and a lasting vigor which stayed with him even in his final illness.

Following his graduation from Colorado College in 1905 with a B.S. degree, he attended the University of Nebraska for a year as a graduate student of parasitology under Professor Henry B. Ward and received the A.M. degree in 1906. After a year's teaching in high school in his native State, Dr. Hall went to Washington, D. C., in 1907 to join the staff of the Zoological Division of the Bureau of Animal Industry of the U. S. Department of Agriculture. With something that was greater than mere enthusiasm of youth, coupled with a tremendous capacity for hard work and sustained interest and effort, Dr. Hall became deeply engrossed in the then slightly explored field of veterinary parasitology. While his interests in that science were at first those of a zoologist, and naturally led him to study the morphology and classification of helminths, he quickly realized the importance of developing methods for the control of parasites that were highly injurious to the livestock industry in certain parts of the country. Control by treatment with drugs and chemicals appealed to him at the start, and one of his earliest contributions deals with anthelmintics. Though he carried a heavy program of research in the laboratory and in the field over a period of nine years, he found time to supplement his formal training; in 1915 he received the Ph.D. degree and the following year he received the D.V.M. degree from the George Washington University. His doctorate thesis in zoology, on nematodes parasitic in rodents, was a valuable contribution to nematology and an early attempt to define the higher groups of these economically important parasites.

Dr. Hall's interest in parasitology soon swung to the therapeutic phase almost altogether, and he made research in anthelmintics his major interest following the completion of his Ph.D. thesis. Upon resigning his position in the Bureau of Animal Industry in 1916, he joined the staff of Parke, Davis and Company as research parasitologist, and during a period of about two years he turned out numerous papers on the therapeusis of verminous diseases of domestic animals. His work at the Parke, Davis and Company laboratories was interrupted by the world war; Dr. Hall was commissioned a second lieutenant and later a first lieutenant in the newly organized veterinary corps of the U. S. Army. Shortly after the war he returned to the Bureau of Animal Industry in 1919 as senior zoologist and assistant chief of the Zoological Division, and resumed his researches on anthelmintics. This led to his most important work, namely, the discovery in 1921 that carbon tetrachloride, a chemical not in use at that time as a drug, was an effective treatment for the removal of hookworms from dogs. In the same year he proposed in a published article the cautious use of this newly discovered remedy in human medicine for the treatment of hookworm disease. Since 1921 several million people in the tropical and subtropical belts of the globe have been treated with carbon tetrachloride, and for many years this was the common drug used for this purpose in human medicine. In South America it was found that following treatment with carbon tetrachloride the efficiency of laborers in the mines increased by about 30 per cent. The success attained with carbon tetrachloride as an anthelmintic in human and veterinary medicine did not altogether still Dr. Hall's ambition to find another remedy with a higher safety factor. In 1925 he announced that tetrachlorethylene was just as effective as carbon tetrachloride and apparently much safer, basing his conclusions on extensive experiments with dogs. The new remedy gradually supplanted carbon tetrachloride, and tetrachlorethylene is now the standard treatment for hookworm disease, human and canine. So far as is known, no fatalities have been recorded following the administration of tetrachlorethylene. Aside from this outstanding work in the field of therapeutics, Dr. Hall standardized many of the anthelmintics in common use in veterinary medicine and added several new ones to the list. He was generally regarded as the outstanding authority in the world in anthelmintic medication.

In 1936 Dr. Hall resigned his position as chief of the Zoological Division of the Bureau of Animal Industry to which he was promoted in 1925, following the death of his predecessor, Dr. B. H. Ransom, to accept the position as chief of the Division of Zoology of the National Institute of Health of the U. S. Public Health Service. The new assignment naturally led Dr. Hall into the field of human parasitology, and he devoted himself largely to the study of trichinosis, calling special attention to the wide-spread occurrence of this disease in the United States.

Dr. Hall received recognition for his scientific work in this country and abroad. He served on the editorial boards of the *Journal of Parasitology* and *Biological Abstracts,* was a member of the National Research Council, a delegate to the Pan-American Scientific Congress (1915–16), president of the Permanent International Committee on Parasitology, a foreign member of the Royal Academy of Agriculture of Torino, Italy, and held offices at various times in scientific societies. In 1925 his alma mater conferred on him the honorary Sc.D. degree.

Dr. Hall had an attractive personality, coupled with a very pleasing appearance. He was a delightful conversationalist and an impressive public speaker.

Totally devoid of what is conventionally known as an oratorical flair, he impressed his audiences by his sincerity, knowledge of his subject and fluency of expression. His ability as a writer even surpassed his talent for public speaking, his scientific and popular papers being written with clearness, precision and in an attractive literary style. Dr. Hall had an unusual flair for literary expression, and he frequently indulged in writing articles on the philosophical and social aspects of parasitism, government, civil service, animal experimentation and other topics; most of his literary articles on these subjects were published in the *Scientific Monthly*. His high sense of social justice, his freedom from the common prejudices of mankind and his hatred of sham and hypocrisy were frequently brought out in his popular articles and in public addresses.

In his personal relationships with the scientific staff under him he was uniformly courteous, tactful and tolerant. He was always ready and willing to give advice to young and inexperienced workers and lend a helping hand not only to his immediate staff but to the many visitors who came to the Bureau of Animal Industry to consult its index catalogues and to work in its laboratories. Among parasitologists and veterinarians Dr. Hall was held in high esteem, as evidenced by his election to the presidency of the American Society of Parasitologists and the presidency of the American Veterinary Medical Association.

Dr. Hall's life was a conspicuous example of wholehearted devotion to the public service which he frequently publicized and defended with his facile pen, a passionate interest in the science of parasitology and a complete dedication of his talents and physical energy to the welfare of his country and humanity.

BENJAMIN SCHWARTZ
U. S. BUREAU OF ANIMAL INDUSTRY

SCIENTIFIC EVENTS

SCIENCE AT THE EMPIRE EXHIBITION, GLASGOW

Nature gives the following account of the Empire Exhibition, which opens next month at Glasgow. It will be the largest and most representative exhibition, with the exception of Wembley that has been held in the history of the British Commonwealth. It will present an impressive representation of the industrial and manufacturing capacity of the British Empire and will show the progress of civilization within the Empire in many of its different aspects. Both in the industrial exhibits and in those for which the government is directly responsible, research will occupy a prominent position. The theme of research will be symbolized in the huge sculptured feature, more than 40 feet in height, which occupies the lofty entrance court of the United Kingdom Pavilion. Above the "original elements," earth, water and air, represented by a golden sphere about which water continuously plays, a figure typifying man's questing spirit is seen to ride on a great silver wave. This figure bears the symbols of energy which science has placed within the grasp of man. The first of the four exhibition halls, each covering an area of 5,000 square feet, which form the United Kingdom Pavilion, is being devoted to a "Fitter Britain" exhibit organized by the Ministry of Health in cooperation with the Board of Education, the Scottish Department of Health and the National Fitness Council. This exhibit will illustrate how the application of scientific knowledge is leading to a healthier nation.

Exhibits in the other three halls in the pavilion have been organized by the Department of Scientific and Industrial Research. The aim of these halls is to demonstrate the part played by scientific knowledge and research in the industrial life of the nation. The three great national industries, coal, iron and steel and shipbuilding, have been selected to illustrate this theme, and one hall is devoted to each of these subjects. In planning the exhibits the department has had the fullest cooperation from industry. Important industrial organizations, such as the Mining Association of Great Britain, the Gas Federation, the Iron and Steel Federation and the Shipbuilding Conference, besides scores of leading firms, have freely given their assistance. Elsewhere in the exhibition the Ministry of Agriculture and Fisheries and the Forestry Commission, in cooperation with the Scottish Department of Agriculture and the Scottish Fishery Board, are showing exhibits illustrating some of the benefits which modern research has brought to agriculture, fishing and forestry. In the agricultural section, dairying, animal nutrition, fruit growing, land crop improvement and animal diseases are dealt with. One section will deal with the gas storage of fruit developed by the Food Investigation Board, and another shows the application of chemistry to the problem of keeping soil fertile. In the forestry section the Forest Products Research Laboratory is cooperating with the Forestry Commission in staging an exhibit illustrating the work of the laboratory as applied to home-grown timber. Another application of industrial research will be shown in an exhibit in the Palace of Engineering arranged by the Home Office, which will demonstrate modern methods of promoting the safety, health and welfare of industrial workers.