Museum; and the present writer, who is secretary of the Board.

The Dominion and Provincial Governments have been active in the establishment of animal parks for the protection of game and non-game mammals and birds, and many thousands of square miles of territory have now been reserved as animal refuges, where hunting is absolutely prohibited.

The successful effort of the Canadian Government in preventing the extermination of the American bison, or buffalo, is noteworthy. The original herd of 750 buffalo that the Government purchased in the United States in 1907 and placed in a special enclosed buffalo park of 168 square miles at Wainwright, Alberta, has now increased to more than 2400, and altogether above 3000 buffalo are now under Government protection, including the wild herd of about 500 head in the Peace River region south-west of Great Slave Lake. With the view of ascertaining the possibilities of the buffalo in relation to agriculture, the Canadian Department of Agriculture is now carrying on experiments in crossing the buffalo with domestic cattle, as the cross-bred animals, like the buffalo, are so admirably suited to withstand the most rigorous conditions of a northern environment and produce excellent beef and superior robes.

A report published by the Commission of Conservation on the fishes, birds, and game of Canada last year gives an excellent account of the manner in which these problems are being dealt with in Canada. Constituting as Canada does the last stronghold of the big-game animals of the North American continent, it is hoped and believed that we shall be successful in preventing the reduction to the point of extermination of the many forms of wild life of interest and importance alike to the settler, the sportsman, and the zoologist.

C. GORDON HEWITT.

PROF. JOSEPH RIBAN.

PROF. JOSEPH RIBAN, honorary professor of the Faculty of Sciences of Paris, who has just died at the ripe age of eighty, was one of a type of French chemists which is fast disappearing. Born at Montpellier, he was originally destined for a career in medicine, but under the influence of Balard, the discoverer of bromine, he was led to interest himself in problems connected with pharmacological chemistry, and took up the study of the toxic principle of redoul (*Coriaria myrtifolia*), which he found to be a glucoside and named coriamyrtine. His work on the physiological, chemical, and physical properties of the new substance occupied him during the greater part of 1864, and the results appeared in a couple of memoirs which were published in the *Journal de Pharmacie* and in the Bulletins of the Chemical Society of Paris. Although he continued to follow medicine, Riban was more and more attracted to chemistry, and his nomination as professor of chemistry and technology at the Ecole Normale of Cluny eventually settled his career. In 1869 he joined his old master Balard at Paris as *préparateur* of his course at the Collège de France.

The Franco-German War interrupted his chemical studies, and during the siege of Paris he was a zealous collaborator of Alphonse Guérin at the military hospital in the Rue des Récollets. On the termination of hostilities he was able to resume his chemical work, and a number of papers appeared in rapid succession, on the products of the condensation of valeric aldehyde, and on aldehydes condensed by the elimination of water, known as *aldanes*, on the terpenes and their chlorohydrates, on terebene, and on camphene. Riban's investigations in what is confessedly one of the most intricate and difficult fields of organic chemistry attracted considerable attention at the time of their publication. They gained for him his degree of doctor of physical sciences, and eventually, in 1875, the Jecker prize. The first samples of synthetic camphor arising out of these researches were shown in the Exhibition of 1878.

Riban now became associated with Berthelot at the Collège de France, and was transferred to the Sorbonne, where he became assistant-professor of quantitative chemical analysis. He practically abandoned inquiry in organic chemistry, devoting himself more particularly to general problems of applied chemistry, especially to questions of hygiene. In addition to his work as director of the analytical laboratories at the Sorbonne, he lectured at the Ecole des Beaux-Arts, and was named a member of the Conseil d'Hygiène. These various public duties left Riban little time for original research, but he published a number of notes and minor communications on compounds of phosphine and on the decomposition of metallic formates and acetates in presence of water, as well as some papers relating to eudiometry and analytical chemistry. He was an active contributor to the "Encyclopédie Chimique" and to the "Dictionnaire de Chimie," and in 1899 published a treatise on electrochemical analysis which enjoyed a considerable reputation.

Riban became a vice-president of the French Chemical Society in 1898, and a vice-president of the Conseil d'Hygiène in 1899. He was a careful, conscientious teacher, distinguished for the clarity and simplicity of his exposition, and a painstaking and accurate experimentalist whose work rests upon a solid and durable foundation.

NOTES.

THE valuable article on rhubarb which appears elsewhere in the present issue was prepared for the *Kew Bulletin*, the publication of which has been suspended on the ground of shortage of paper. When we see the waste of paper used in Parliamentary Reports, National Service propaganda, and by Government departments generally, and place this by the side of the amount required for the continued publication of such a periodical as the *Kew Bulletin*—Imperial in its scope and influence—we begin to despair that our State