

coils, and is then blown by an electric fan through ducts opening in the side walls of the laboratory. Fumes pass out not only through the individual fume flues of the hoods, but also through numerous flues opening a little below the ceiling along all the walls. These flues have also openings near the floor, so that either opening may be used as occasion demands. Spectroscope accommodations are furnished in the four corners of this laboratory. One feature worthy of notice is the broad eight-foot aisles between the lines of desks. This gives abundant room to every student.

Supply Room (6 x 16). This room is of two stories and is intended to be used for the issuing of reagents and as a storage room for smaller glass apparatus.

Instructor's Room (12 x 16). Because of the great height of its ceiling this room has a gallery around two sides, thus greatly increasing the storage space for chemicals, because of the increased wall space for shelving. The distilled-water apparatus is here located and the supply of distilled water is here stored in a tin-lined copper tank, the water being tapped off therefrom to a spigot in the main laboratory. The room is equipped with complete apparatus suitable for a private laboratory.

Ward Room (10 x 16). Fitted with the usual accommodations for receiving hats and coats of the students.

Organic Combustion Room (8 x 16). This room is fitted with Alberene stone tables, gas, blast and suction and is arranged to receive the combustion train for the usual work in organic combustion.

Third Floor.—The Lecture Room (50 x 41 ft. 6 in.) has seating accommodations for two hundred men. It contains the large lecture table with pneumatic trough and the other essentials to fit it for lecture uses. It is lighted by three small and six very large windows. On the wall opposite the lecture table there projects a gallery intended to hold the electric lantern for illustration work. This gallery is entered from the floor above.

Private Laboratory (16 x 24). This room is

fitted as a private laboratory for the professor of chemistry and contains the usual complement of hoods, water baths and other appliances suitable to such use.

The Laboratory for Gas Analysis (11 x 16) contains Alberene-stone table, water, gas and blast accommodations, with suitable shelving to accommodate the apparatus for which the room is intended to be used.

The Special Laboratory (10 x 16) is fitted in the same manner as that of gas analysis and is intended to be used for such special work as the examination of food products, etc.

Fourth Floor.—**Water Laboratory (20 x 31).** This laboratory is fitted with Alberene-topped tables and with water appliances suitable to the very complete examination of questions dealing with the examination of potable, mineral and boiler waters. Appliances are here established for undertaking such examinations from both the chemical and the bacteriological sides. An especially devised table for the determination of free and albuminoid ammonia permits of the analysis of six waters at once. Suitable provision is made for the sterilizers, incubators and other apparatus peculiar to a water laboratory.

Section Room (20 x 20). This room is fitted with blackboards and is intended for use as a recitation room in chemistry. It has accommodations for a section of about twenty-five men at a time.

The Halls.—The halls throughout the building are eight feet in width.

Lighting.—The building is piped for gas, but it is as a precaution only, inasmuch as electricity is to be depended upon for lighting purposes.

W. P. MASON

ALLAN MACFADYEN

At the early age of forty-six years Dr. Allan Macfadyen has been taken away from his work. By an accident in the laboratory in which he was working a preparation of the serum for Malta fever infected him—the infection seems to have been through the eyes—and death carried him away. Professor Macfadyen was educated in Edinburgh and grad-

uated in 1886. Two years later he took his B.Sc. and then studied abroad at Berne, Göttingen and Munich. There he flung himself upon laboratory methods and bacteriology and in 1889 became professor of bacteriology in the College of State Medicine in London. He was associated with Lord Lister, Sir Joseph Fayrer and others in the inception and foundation of the Jenner Institute and was himself director of the institute. Under his direction the new and splendid laboratories were built at Chelsea. That institute is now known as the Lister Institute and into it Dr. Macfadyen built some of the best years of his life.

But that which will give him a permanent place, according to the London *Lancet*, in the history of science is his experimental work on the intracellular toxins of bacteria with which his name is so intimately associated. His many valuable papers to the Royal Society and scientific journals, English and German, testify to his activity in the investigation of important matters relating to preventive medicine. They run over a wide range of subjects, but by far the most important, as they will probably be the most enduring, are his studies on the intracellular toxins. After resigning his position at the Lister Institute, where his persistence in this line of research was, we must suppose, unappreciated, although it had the support of Lord Lister, he pursued his investigations at King's College and at the Wellcome Laboratory. Concerning his work there a friend writes: "Macfadyen's view was that serum therapeutics had reached an impasse, owing to the great difficulty of producing efficient antibodies for intracellular toxins, and he made a profound study of the delicate and volatile nature of the most active toxins and the destructive effect of heat and other agents upon most of them. He had prepared from the endotoxins of the bacilli of typhoid fever, cholera, pneumonia and other diseases serums of higher antitoxic power than had ever been obtained before. At the time when he became ill he had succeeded in his anticipation with the plague endotoxin and was working also at Malta fever. He expected to have brought to completion in the course of three or four

months a research which had engaged his attention for years and which would have brought the sera into use. His anti-typhoid serum has already begun to be employed in some of the London hospitals. But, alas, it was not given to him to finish his work."

Dr. Macfadyen had made a reputation for himself as a popularizer of science. In his lectures before the Royal Institute he attained a distinct success as a public speaker. He was married to Miss Marie Bartling, the daughter of Professor Bartling, director of the Botanical Gardens at Göttingen. He leaves a widow but no children. Many of his pupils are in Canada and in this country and from all over the world expressions of sympathy have been received from those who worked with him in his laboratories at Chelsea.

GOVERNMENT APPROPRIATIONS FOR SCIENTIFIC PURPOSES FOR THE FISCAL YEAR ENDING JUNE 30, 1908

THE following list of appropriations for the fiscal year ending June 30, 1908, for the government scientific bureaus has been compiled from the various congressional appropriation acts. It is not an official summary such as will appear later in the digest of appropriations published by the division of bookkeeping and warrants of the Treasury Department.

Besides the bureaus included in this list are a number of departmental interests which involve the direct application of science in one form or another. Under the Treasury Department, for instance, the supervising architect's office, the office of the director of the mint, and assay offices, the bureau of engraving and printing, and the whole of the public health and marine hospital service, are in a sense bureaus of applied science. So, too, under the War Department, the office of chief of engineers, the bureau of ordnance, the signal office, and the surgeon general's office, and under the Navy Department, the bureau of steam engineering, the bureau of ordnance, and the bureau of medicine and surgery might be called scientific bureaus. The lighthouse board of the Department of Commerce and Labor, and the Indian office and bureau of education of the Interior Department, are