

Wyatt Galt Johnston and the Founding of the Laboratory Section *

THIS occasion, marking the fiftieth anniversary of the Laboratory Section, has provided a rewarding opportunity to reexamine the early records in the archives and to review the work of the founders; not alone in relation to the organization of the Section, but in the broader field of medicine and public health.

It has been shown in other years how the origins of the Section may be traced to the year 1886 through the *Papers and Reports* of the Association. In 1886 a committee of five, with Major Charles Smart of the United States Army as Chairman, was appointed as a Committee on Water Supply.¹ After several difficult years, this committee recommended at the meeting in Montreal in 1894 that a coöperative investigation be instituted with regard to the bacteriologic examination of water supplies.² I quote Major Smart's preface to the final report of 1897 as the most succinct account of this important undertaking.³

At the meeting of the American Public Health Association in Montreal, Canada, in 1894, the Committee on the Pollution of Water Supplies closed its report with the suggestion of a coöperative investigation into the bacteriology of water supplies as a means of bringing order out of the chaotic state of the literature of water bacteria, and of throwing light from the bacteriological side on questions of practical sanitation. This suggestion (for which credit is due Dr. Wyatt Johnston) was approved by the Association, and the chairman of the committee was authorized to build up a committee for collective bacteriologic investigation. The bacteriologists promptly acceded to the proposition. They recognized that such an investigation would give an immense im-

petus to bacteriological work; that it would do much to clear away the confusion surrounding species, and to increase and systematize our knowledge; and that practical results might also be expected, particularly as regards the typhoid and colon bacilli, the unwholesomeness of water supplies and the means of lessening the prevalence of typhoid fever and diarrheal diseases. A sub-committee consisting of Professor J. George Adami, Dr. Wyatt Johnston, Mr. George W. Fuller, and myself, appointed to determine the methods of laboratory procedures to be adopted by the committee in the practical work of the investigation, found it impossible to formulate a satisfactory scheme of work until certain questions, mostly relating to technique, had been discussed fully and settled in accordance with the most advanced knowledge of the subjects concerned. An effort to effect this by correspondence developed so much variance in the practice of the different laboratories that it became needful to call a convention for a thorough discussion of the points at issue. The convention was held in the Academy of Medicine, New York City, June 21 and 22, 1895. Most of the prominent bacteriologists of the United States and Canada were present, but although the members were informed beforehand of the subjects that were to be brought up for settlement, and although full discussion was given to each under the chairmanship of Professor Welch of Johns Hopkins University, many of the points presented so much difficulty that the whole series was referred to a committee, with the understanding that the convention would accept its decision. . . .

The committee met in New York City in February, 1896, to digest its materials and outline its report which was presented to the American Public Health Association at its meeting in Buffalo, New York, in September of that year. The report was subsequently withdrawn for further criticism and amendment, and was finally submitted for publication at the meeting of the Association in Philadelphia, Pennsylvania, September, 1897.

It is significant, from this vantage point of fifty years later, to hear Dr. Welch's comment on the occasion of the meeting at the New York Academy of

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Medicine in 1895. He said, "This meeting together for the first time in this country of a convention of bacteriologists is most interesting. It is quite possible that this may be the starting point of similar meetings and possibly of the formation of an association of bacteriologists hereafter."⁴

Thus, in 1897, the first publication was made of "Procedures Recommended for the Study of Bacteria with Especial Reference to Uniformity in the Description and Definition of Species. Being the Report of a Committee of Bacteriologists to the Committee on the Pollution of Water Supplies of the American Public Health Association." The whole remarkable undertaking was the result of the suggestion of Professors G. George Adami and Wyatt Johnston, the latter a member of the Committee.²

It was natural, therefore, that in 1898, at the meeting in Ottawa, care was taken to assure the continuity of the work by the establishment of a "Committee on Laboratory Work and Methods, Dr. Wyatt Johnston, Chairman, with power to add associates."⁵

Dr. Johnston, with characteristic energy, organized the new Laboratory Committee, so that within the year the number of adherents was nearly 100, and nearly half were new members of the Association. The first meeting was held in Minneapolis, October 30, 1899,⁶ the day before the opening of the meetings of the Association proper. Dr. Johnston, reporting, stated that

"Those whose coöperation was asked showed the greatest willingness in advancing the objectives, which made the work of organization surprisingly light and pleasant. Feeling that it would be necessary to secure the coöperation of some one prominent among laboratory men and known by all as a leader in scientific work, I asked Professor William H. Welch to act as honorary chairman of the committee. His consent contributed more than anything else to the success of the work. . . . This has enabled me to act as secretary and organizer of the committee with greater freedom. . . . The unanimous opinion of the

committee is that it should be, if possible, transformed into a section of the Association . . . and in case this is accomplished at this meeting, the committee, as now constituted, will have completed its mission and would ask to be discharged."

Dr. Welch reiterated this opinion in an address to the Association on the "Relations of Laboratories to Public Health," saying, "Many of you know that the workers in these laboratories have come together on this occasion in unusual numbers, largely through the very excellent work of our public spirited member, Dr. Wyatt Johnston. They have been brought together here with a view to organizing a Laboratory Section of this Association."⁷

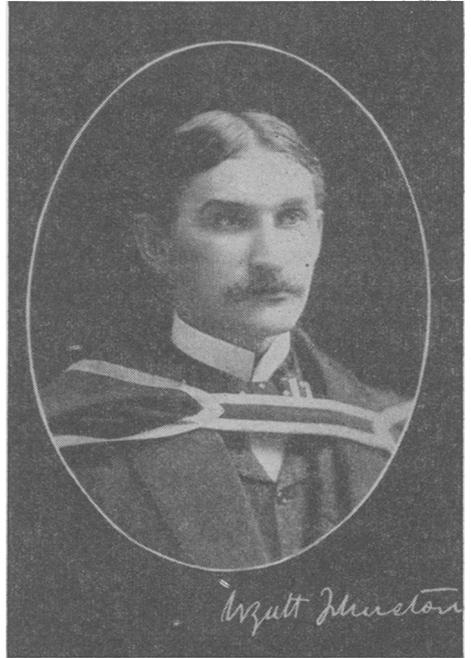
The constitution of the Association was amended at this meeting in 1899 authorizing the formation of sections and under it the first section was immediately formed—the Section of Bacteriology and Chemistry. In 1902 at the meeting in New Orleans, a constitution was adopted and the name changed to The Laboratory Section.

From this chronology it is evident that Dr. Wyatt Galt Johnston has a first place in the annals of the Laboratory Section. But it is not for this alone that Dr. Johnston should now be recalled. He has a significant position, also, in the advancement of bacteriology and pathology in America. His contemporaries have said that few men of his time in Canada contributed so much, and such valuable, research in the field of public health.^{8,9} Nor is the value of his work limited to the period of his life. One of his contributions, adopted in McGill University in 1899, is in wide use today in laboratories throughout New York State.

Dr. Wyatt Galt Johnston was born in Sherbrooke, P.Q., Canada, in 1863, and died in Montréal, June 19, 1902. He became a member of the American Public Health Association in 1892. He was the first secretary of the Laboratory Section, 1899–1900, and its second chair-

man, 1900–1901. (Other officers in that year were Dr. Edwin O. Jordan, Vice-Chairman; Dr. George C. Whipple, Secretary; and Dr. Herbert D. Pease,* Recorder.) Dr. Johnston was graduated in medicine from McGill University in 1884. He made several extended visits to Europe, working for some months in the noted bacteriologic and pathologic laboratories of the period. Immediately upon graduation he was appointed Demonstrator in Pathology at McGill University under Osler; Lecturer in Bacteriology under Adami, 1894; Lecturer in Medicolegal Pathology, 1895; Assistant Professor of Public Health, 1897; Professor of Hygiene and head of the department, 1902. He was also, during this period, Bacteriologist of the Provincial Board of Health of Quebec and Coroner's Physician for the District of Montreal. Within ten years of his graduation he was a leading authority in medical jurisprudence and a pioneer in the teaching of this subject.

Among his many contributions may be mentioned "A new method for the culture of diphtheria bacilli on hard-boiled eggs"—a practical method of rapid diagnosis. In 1892, he introduced the use of sterilized swabs in test tubes for the taking of cultures and he spoke strongly against withholding diphtheria antitoxin until the bacteriologic diagnosis was known. The bacteriologic diagnosis of leprosy also received Dr. Johnston's attention. When Widal published his work on the agglutination test in the diagnosis of typhoid fever, it was largely through Dr. Johnston's exertions and his modification of the method by the use of dried blood that the test became at once of widespread practical utility. His own account of this work is in a paper presented before the Association in Buffalo in 1896.¹⁰ The biologic analysis of Montreal's water supply led him to



Wyatt Galt Johnston, 1863–1902. Secretary, Laboratory Section, American Public Health Association, 1899–1900. Chairman, 1900–1901.

recommend regular and frequent examinations, for which he devised a method of collecting water samples at various depths. His researches were conspicuous by their originality, directness, and integrity. He was indefatigable. Combining this quality with his concentration and rapidity of thought, his knowledge of the practical merit of the foremost publications in his field was invaluable.

All that I have reported thus far on the work of Dr. Johnston has been taken from the archives of the Section and from published records. Of the following contribution, however, I have direct knowledge. It is a classification for pathologic specimens or tissue slides by anatomic system, by organ, and by lesion, with a decimal enumeration based on the Dewey Decimal System of library classification. The anatomic condition is represented by numbers before the decimal point, the pathologic

* Dr. Pease was present at the Laboratory Section Dinner in New York, October 24, 1949.

condition by numbers after it. The pathologic portion of the classification was original with Professor Johnston.^{11, 12}

In 1899, the year in which he was also organizing this Laboratory Section, Dr. Johnston presented the decimal system of classification to the Museum Committee of the Department of Pathology, McGill University. It was adopted, compiled, and the collection cataloged upon it. Dr. Maude Abbott, Curator of the Museum, reported on its installation and use shortly after Dr. Johnston's death.¹¹ Dr. Johnston's plan in its entirety embraced the medical museum as a whole. The Museums of Anatomy, Pathology, Public Health, and Legal Medicine were divisions in it and the separate matter of each had a decimal classification of its own. But the only one that was fully worked out and applied at McGill in Dr. Johnston's lifetime was that in the Museum of Pathology.

In the anatomic classification a number is given to each system, as, 1. Circulatory System; 2. Respiratory System; 3. Digestive System, and so forth. Organs are made to follow each other, so far as possible, in their relations in the body, passing from the surface inward. In each classification, there is division into ten main groups and each of these groups may be divided at will into ten, and so on, indefinitely. The plan admits of sub-classification to an indefinite extent in any one direction that may seem desirable. Thus, if a museum is rich in tumors, the lesion can be stated in a sub-heading after the classification. The classification is of equal value to the teacher, the student, or the experienced pathologist.

This basic scheme was adopted in the museum of the Division of Laboratories and Research of the New York State Department of Health in 1934 under a slightly modified form,¹³ and has been successfully used in the classification of more than 3,500 cases of neoplastic

disease. In 1948, it was extended to the classification of duplicate deposit collections of case histories and tissue slides in 80 other laboratories in the state—municipal, county, hospital—approved in pathology by the department under the system of approval effective in relation to pathology since 1933.¹⁵

As Dr. Maude Abbott said when the classification was adopted at McGill University in 1899, . . . this system is an aid to exact definition which is the basis of accuracy." The year 1949 is thus not only the Fiftieth Anniversary of the founding of the Laboratory Section. It is also the Fiftieth Anniversary of the successful use of a *Classification of Museum Specimens by Anatomic System* devised by the man who in largest measure was responsible for the organization of the Section itself, Dr. Wyatt Galt Johnston.

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