

2. In addition to the naturally occurring mycobacterial diseases, just listed, a wide variety of disease processes caused by acid-fast bacteria can be induced experimentally by infecting different animals with the various bacilli of the group. Variations as follows can be produced at will:

(a) From one strain of mycobacteria in different animal species.

(b) From different strains of mycobacteria in one animal species.

(c) From one strain of mycobacteria in one animal species modified by immunization.

(d) From one strain of mycobacteria in one animal species with genetic variability in susceptibility.

(e) From the dissociated elements of one strain of mycobacteria in one animal species.

Thus a wide variety of mycobacterial diseases occurs as a result of animal and bacterial variability.

3. Although host and infecting agent are variables, constants occur in the chemical constituents of the two. Of the chemistry of the cells of the animal body which accumulate in the characteristic lesions of this group of diseases, little of significance is known. In contrast, much information is available on the chemistry of the artificially grown mycobacteria. Lipids,

proteins and carbohydrates are distinctive, qualitative and quantitative differences being detectable within the group. The lipids act as stimulants for the large mononuclear phagocytic cells, and the proteins also call them forth in the acute processes of the diseases concerned. In general the inflammatory exudations and the toxic necroses seem to be the result of protein action, particularly after "hypersensitiveness" is induced in the course of the disease, while the chronic changes are due in large measure to the bacillary lipids. The ultimate "epithelioid" appearance of the characteristic cells making up the lesions of the several diseases concerned appears to be the result of destruction of acid-fast bacilli within them and cytoplasmal dispersion of their constituent lipids. Some of the carbohydrates as well as proteins appear to be toxic for animal cells.

4. With these facts at hand the great variability of mycobacterial disease is understandable as the result of interplay of variable bacteria and variable animal cells, each with its individually characteristic content of biologically active chemical constituents. This can be shown readily for the experimental disease in the laboratory, and the facts brought to light suggest plausible explanations for the great variability of spontaneous mycobacterial disease in nature.

OBITUARY

DAVID WILLIAM MAY

It is with a deep sense of loss that his former colleagues record the death of David William May, retired director of the Puerto Rico Experiment Station of the United States Department of Agriculture. He died on December 12, 1937, at Mexico, Mo., and was buried in Lexington, Ky.

Director May was born in Platt County, Mo., on April 22, 1868. Educated in the schools of that state, he received his bachelor's and master's degrees from the University of Missouri in 1894 and 1896, respectively. He spent three years as assistant agriculturist at the Missouri Experiment Station and two years in Washington as assistant in agriculture in the United States Department of Agriculture. He was appointed animal husbandman at the Kentucky Experiment Station in 1901, and three years later became director of the Puerto Rico Experiment Station, in which position he continued for twenty-six years.

Director May came to Mayaguez only two years after the station had been established by act of Congress in 1902; at that time he was but thirty-six years old. He gave to the station the most productive years of his life, and his impress will remain for many years. He secured appropriations for and

supervised the erection of the station laboratory and office buildings, developing an architecture which is constantly admired for its beauty as well as its adaptability to its tropical setting and climate. The lands operated by the station were extended to 420 acres. He and his staff assembled what has been stated to be the largest collection of tropical plants in the Western Hemisphere.

Director May did much to build up and diversify the agriculture of Puerto Rico and put it on a more self-sustaining basis. He also helped to devise and introduce improved methods, and he shared in the eventual development of the station as a tropical outpost for the United States Department of Agriculture. He served for many years as a trustee of the University of Puerto Rico, and it was primarily due to his initiative that the College of Agriculture and Mechanic Arts of the university was founded and located at Mayaguez contiguous to the station.

Mr. May's colleagues feel that no written word can be an adequate tribute to his accomplishments and personal qualities, but that the beautiful gardens and buildings of the experiment station itself will constitute a fitting memorial to him.

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