this tribute it is the wish of the writer to place a wreath upon his bier.

H. H. W.

HERMANN M. BIGGS[1]

DR. BIGGS was born at Trumansburg, N. Y., in 1859. He was of English descent. His early education was completed at the Trumansburg and Ithaca Academies and at the Cornell University Preparatory School. Entering Cornell University in 1879 he graduated A.B. in 1882 and received the degree of M.D. from Bellevue Hospital Medical College in 1883, thus accomplishing seven years work in three and one half. After an interneship in Bellevue Hospital in 1883–84, he studied the following year at Berlin and Greifswald in Germany. On his return to New York he became director of the newly opened Carnegie Laboratory of the Bellevue Hospital Medical College. Then for a time he held in succession at the latter institution the positions of lecturer on pathology, demonstrator of anatomy, professor of materia medica and therapeutics, professor of therapeutics and clinical medicine, adjunct professor of medicine and in 1912 professor of the practice of medicine.

In 1892 he organized the division of pathology and bacteriology in the Health Department of the City of New York, becoming pathologist and director of the laboratories. This position he held during a period of great activity in the department because he was constantly utilizing for practical ends the new revelations of science in bacteriology and preventive medicine and in conducting a campaign of education, not only of the people at large, but in the medical profession of New York City, many of whose eminent members steadily opposed the new methods and scoffed at the new light.

In 1902, under the mayoralty of Seth Low, a new office was created in the Health Department, that of general medical officer, and Dr. Biggs was made its first incumbent.

In 1913, after twenty-two years of active service, Dr. Biggs resigned from the Department of Health of the City of New York and was soon to enter upon a not less distinguished period of service to the state. Among the outstanding features of his service to the City of New York one may recall his early acceptance of the diphtheria antitoxin as of great and immediate importance, and his eager interest in its preparation in the new laboratories of the Department of Health, the first municipal bacteriological laboratories in the world to be established. These laboratories became at once a most important factor in the control and prevention of infectious diseases in the city and a model in administration and method of the application of science on a large scale to the welfare of mankind. His rare command of the qualities of knowledge, sincerity and tact enabled Dr. Biggs, through all the vicissitudes and turmoils of the political arena in New York, through all his two and twenty years of service, to carry out, unhindered, his plans as one by one they took form, to fulfill for his fellow men the promise of science in the prevention and assuagement of disease.

Dr. Biggs' greatest achievement and his most heartbreaking task was the launching of the campaign for the prevention and cure of tuberculosis. Early diagnosis was important and notification essential to success in general control and prevention. Eager, as was his wont, to secure the counsel of his fellows, he called together a score of the most eminent physicians of the City of New York at the Academy of Medicine to discuss the feasibility of notification of tuberculosis. The eminent physicians were almost unanimous in their opposition to the taking of any official steps in the matter. They feared panic, they predicted mental disturbance of the afflicted and their friends, they forecast the ruin of boarding houses, they distrusted the effectiveness of any of the proposed measures for prevention; and who knew, anyhow, whether the tubercle bacillus was more than a fiction or a blunder of the laboratories?

So it was clear that any direct movement forward would meet with the opposition of this group at least of eminent practitioners. Dr. Biggs was disappointed, of course, but not dismayed. His quiet remark when the session was over was, "Well, we must educate them and the public." And the laboratories were one of the most effective educational influences. It was in those days quite a task to make a microscopic examination of sputum for tubercle bacilli. Dr. Biggs proposed that his laboratories should make, free of charge, examinations for everybody who might present a specimen. And they did it. And presently all the world which was awake was making free examinations of sputum. Thus, through early diagnosis, a new hope was created for the stricken. This was actually the initiation of the anti-tuberculosis movement whose achievement and promise are so gratifying, to-day.

Then visiting nurses were secured for tuberculous patients sorely needing their ministrations; there followed compulsory segregation of the careless; the creation of the Otisville Sanitarium, fit example of a beneficent municipal tuberculosis hospital; and the Riverside for the hopelessly afflicted. So after some

[1] Memorial presented by the Executive Committee relating to the death on June 28, 1923, of Dr. Hermann M. Biggs, a member of the Board of Scientific Directors of the Rockefeller Institute since its organization more than twenty years ago.

years of constructive pioneer educational work, notification of tuberculosis came without a murmur even from those who survived among the eminent score of doctors who would have none of it. In 1886, the year before the attempt to enlist the interest of the medical profession in the new crusade, the mortality from tuberculosis in the City of New York was 3.55 per thousand of population. In 1910 it was 1.85; in 1920 it was 1.09; in 1922 it was 0.85.

Dr. Biggs seemed always to be devising some new means for the improvement of the public health. He was a man of constructive vision. Working through others, his accomplishments were prodigious. The bureau of child hygiene in the New York City Health Department was organized and grew into its great accomplishments under his inspiration.

He was a member of the Quarantine Commission which in 1892, under the auspices of the New York Chamber of Commerce, was concerned in rescuing from the hands of an incompetent commissioner a fleet of passenger ships bearing Asiatic cholera which were steadily massing in the lower bay without intelligent attempt to cleanse and discharge them. He was interested in the state quarantine so early as the period when it was the unquestioned practice of the then official health officer of the Port of New York to carry out—for a fee—the disinfection of ships from suspicious ports by burning a lump of sulphur in an iron pot set on the open deck forward, no matter which way the wind blew. For many years he was a member of the consulting board of Alvah H. Doty, the accomplished quarantine officer of a later day.

In 1917 he was head of a commission sent by the Rockefeller Foundation to study tuberculosis in France. He was also a member of the war relief commission of the Rockefeller Foundation and a member of the Council of National Defense. He was a member of the International Health Board of the Rockefeller Foundation. In 1920 he was for a time medical director general of the League of Red Cross Societies at Geneva. His services were always at the disposal of organizations for the advancement of the general welfare. He was attending or consulting physician to various hospitals in New York. He was a member of many learned societies. He was the recipient of academic and other honors. He was honorary fellow of the Royal College of Physicians of Edinburgh and of the Royal Sanitary Institute of Great Britain. In 1908, for distinguished work on public health, the order of Knight of Isabella the Catholic was conferred upon him by the King of Spain. He translated Hueppe's "Methods of bacterial investigations," one of the early books to get into English telling of the new world which was unfolding itself down on the border land of life, and was to prove of such vital significance to the well-being of mankind. He published papers on many subjects relating to the public health. And withal, he was a busy and successful practitioner of medicine.

In 1913, in the midst of the preoccupations of such a busy life as has been here portrayed, Dr. Biggs was appointed by the governor chairman of a commission to revise the public health law of the State of New York. Bringing to this task his great experience, his sound judgment, his remarkable constructive vision, his commission framed a law which may safely be called a model and whose principles and details have been widely followed throughout the United States. One of the notable features of this law over which Dr. Biggs had pondered long was the establishment of a Public Health Council of seven members to advise with the commissioner of health on all matters concerning which he might seek counsel or on which as students of the practical workings of the department they might choose to tender advice. The council is invested by the law with large powers of sanitary control through its authority to establish a sanitary code and from time to time to revise and mould it to meet the requirements of science, new methods in sanitation and the changing economic conditions of the time. In 1914, Dr. Biggs was appointed by the governor state commissioner of health and chairman of the Public Health Council.

Under the leadership of Dr. Biggs, order soon established itself in the department and a new spirit of loyalty to the service and its chief awakened. Health supervisorships of districts were created as paid offices, persistent effort was made to give to the position of local health officer throughout the state a dignity and recognition which had long been wanting and to secure more capable incumbents. The laboratories soon lost their forlorn incompetencies and under the guidance of Dr. Wadsworth, became adequate representatives of science and of the spirit of the new day in preventive mediicne.

One of the early accomplishments among his activities as commisisoner of health of the State of New York was the reorganization of the work for children, and very soon an efficient division of infant and maternity welfare was spreading its beneficent influences even to the remotest corners of the state. In 1913 the State of New York (exclusive of New York City) had an infant death rate of 120 per each thousand living births. In 1922 the infant death rate was 81.

It became a high privilege to serve on the Public Health Council if for no other reason than to see with what quiet, unobtrusive efficiency the commissioner carried the supervision of all the various lines of intense activity throughout the state. He was patient, except with sheer incompetency or neglect. His plans were well considered and far seeing; he was wise in

reading public opinion. And he could always wait. If his carefully matured project for some new public health activity which science and the time seemed to have made feasible went shipwrecked on legislative stupidity or on political ambitions or on professional jealousies, he never railed but serenely sought some other way or patiently bided his time awaiting, or more commonly, assisting, the slow growth of mass enlightenment.

Under his leadership the policies and organization of the Health Department of the State of New York have steadily developed until at the time of his death it was one of the most effective ministers to the public health in the United States and one of the foremost in the world.

It was obvious when the Board of Scientific Directors of the Rockefeller Institute was being formed that his intimate knowledge of the domain of public health, practical medicine and the new outlooks in research which were so inspiring at that time should lead to the selection of Dr. Biggs as one of the men to initiate the new venture. His interest in the progress and successes of the Institute has been keen. He has been most helpful in the deliberations of the board as well as in the adjustments of the relationship of the Institute to outside phases of practical medicine and research.

He was wise in counsel, he was ready in service, he was a good comrade; we shall miss him on this board.

SCIENTIFIC EVENTS

EXPERIMENT STATIONS IN FINLAND[1]

AGRICULTURAL experimentation in Finland is now being reorganized under a law passed this year, putting this work on a permanent basis. Research is now being conducted mainly by eight institutions. Of these the Central Agricultural Experiment Station situated at Dickursby, Anas, about 10 miles from Helsingfors, is operated by the government. It is organized into departments of plant cultivation, agricultural chemistry and physics, biology of domestic animals, plant bacteriology and diseases, and agricultural entomology. Each department is under the direction of a professor of the University of Helsingfors, and the staff also includes an assistant and a clerk with university training. Besides comparative vegetable tests, plant breeding is carried on, special attention being given to the breeding of oats. Many students of the agricultural department of the university are given training each year.

The Government Bureau for the Examination of Butter and other Edible Fats is situated at Hango. Its principal work consists in the examining of butter to be exported from the country, but it also conducts investigations of other food fats. It has a staff of dairy experts and chemists.

The Economic Investigational Bureau of the Agricultural Administration at Helsingfors conducts inquiries based on data procured from several hundred privately owned farms. The chief object is to furnish information in regard to the costs of agricultural production and the profitableness of various sized farms in different parts of the country.

The agro-geological section of the Geological Commission, also at Helsingfors, conducts investigations in regard to soils and prepares agro-geological maps for the different sections. This institution is maintained with state funds.

The Swamp Cultivating Experimental Station of Lettensue, about 75 miles north of Helsingfors, is owned by the Suomen Suoviljelysyhdistys (Finland Swamp Reclamation Society), which receives financial aid from the state. The station conducts experiments in the cultivating, ditching and fertilizing of swamps. Similar stations are located at Ilmajoki, about 270 miles north of Helsingfors, where special attention is given to pasture studies on peat bogs, and at Tohmajarvi, about 417 miles east of Helsingfors.

The Plant Breeding Station of Tammisto at Malm, about seven miles from Helsingfors, is owned by the Keskusosuusliika Hankkija (Hankkija Cooperative Society). Its work consists in the breeding of the more important plants, and it is under the direction of a trained specialist.

In addition to the foregoing, the cattle breeding societies operating in Finland and receiving state aid conduct, in connection with the keeping of records of purebred stock, investigations in regard to the heredity of domestic animals. Of these societies the most important are the Society for the Breeding of Ayrshires at Helsingfors, the West Finnish Society for the Breeding of Domestic Animals at Karkku (near Tammerfors), and the East Finnish Society for the Breeding of Domestic Animals at Kuopio.

[1] From the *Experiment Station Record.*

ROTHAMSTED EXPERIMENTAL STATION

ACCORDING to the London *Times*, the report of the Rothamsted Experimental Station, Harpenden, for 1921–22, which has recently been issued, contains information which will be of value to the agricultural community. Perhaps the most significant remark in the whole report is contained in a comment on the expenditure and cash returns per acre of the ground cultivated by the station. Profits are shown in the period from October, 1919, to September, 1920, but thereafter practically every item is a deficit, and it is observed that "from 1920 onwards the financial results are deplorable and show clearly why many of the arable farmers of to-day are in their present position."