CHAPTER V

Some of the Charter Members

The American Epidemiological Society was, at the start, a small, but fervent organization. The founding fathers who controlled it played an earnest and meaningful role in the early life of this organization which could not help but contribute to its success.

In order to give some idea of the personalities involved, brief biographical sketches of a few of the charter members are given.

Those 26 persons to whom Emerson and Godfrey had sent out letters of invitation in October 1927 and from whom they had received favorable replies, I believe, represent the true charter members of our Society.

Another and longer list which bears the name of "Charter Members of the AES" has been unearthed among Haven Emerson's notes, made in the early years of his secretarialship. This list of 40, includes the names of 14 who were elected at the first meeting of the Society, but I have chosen the original 26 as the official charter members. In the early years there seemed to be no need to enlarge the Society beyond the group of 40 mentioned on Emerson's second list. At least it was an ideal group for the type of spirited discussions which were held at AES meetings for the next 5 years.

It may be of interest to see what the backgrounds of some of this early group of 40 had been. Three of the men (Frost, Leake and Maxcy) had spent longer or shorter periods of apprenticeship on what might be called observational and statistical epidemiological field studies which dealt with subjects such as poliomyelitis, influenza, and murine typhus. Their activities qualified them as the real epidemiologists of their time. Chapin, Godfrey and Emerson had been municipal or state health officers, but could be classified as academic epidemiologists according to contemporary standards. Aycock and Park had started out essentially as microbiologists, but had ended up as specialists in the application of microbiological and statistical techniques in the field of preventive medicine. Zinsser had also been a microbiologist but it is difficult to classify him in his later years. He certainly qualified as an epidemiologist in the days when the subject was almost entirely concerned with infectious disease; but he was also a writer of merit and a philosopher of medicine and the health of the public, in all its aspects. Opie was a pathologist who interpreted pathology in the true sense of the word—namely, the study of disease. In other words, he interpreted the term almost in the manner of Claude Bernard. Opie's belief was that pathology included pathogenesis and dissemination, as measured by a number of different methods. It was not limited
to observations on morphological changes in human tissues wrought by disease. Webster had been originally trained in pathology but had turned to experimental epidemiology. Reed, and Frost too, qualified as biostatisticians with epidemiological leanings. The common interest which had brought this somewhat polyglot group together, representing American exponents of the sciences of pathology, microbiology and the disciplines of hygiene and preventive medicine, was a realization that the medical sciences in which they were engaged lacked a point, a common central meeting ground, which hitherto had not been brought into proper focus.

Yet, I repeat, no historical account would be complete without the inclusion of brief biographical sketches of some of these early members and the fervor which they contributed to the cause of epidemiology and to the Society.

Charles Value Chapin

Charles Value Chapin (1856–1941) had all the earmarks (see Fig. 1) of a man devoted to scholarly pursuits. He had much more of the appearance of the nineteenth century college professor than one who epitomized the average twentieth century health officer, who of necessity was apt to be an extrovert, if he was to keep his job for long. But Chapin remained in office in the City of Providence for 40 years. Here he spent a prodigious amount of time in his library at home, no doubt most of it at night, poring over lists of figures representing biostatistical data from the City of Providence, denoting local rates of infectious diseases—especially measles and scarlet fever. From these analyses he experienced that fierce

Fig. 1. Charles V. Chapin, M. D. (1856–1941). Courtesy of the Rhode Island Medical Society.
joy of accomplishment that goes with the knowledge that one is breaking new ground in dealing with familiar problems present at his very doorstep. He derived great personal satisfaction from his accurate, carefully compiled and meticulously arranged statistics on common communicable diseases within that city that he knew so well. This represented work over and above his routine duties as health officer. It was a true labor of love. Although he little imagined that his analyses would get farther than the Reports to the Board of Health of the City of Providence, RI, nevertheless, they did. Chapin’s records have been used by countless students ever since.

This remarkable man was born in Providence, in 1856, attended local schools and graduated from Brown University in 1877. Subsequently, he matriculated at Columbia University’s College of Physicians and Surgeons, but at the end of a year transferred to the Bellevue Hospital Medical College where the young Dr. William H. Welch had just arrived to teach microscopic pathology. Here Chapin was exposed to other stimulating professors such as Austin Flint, Abraham Jacobi and the elder Dr. Janeway. While Chapin was at the Bellevue Medical College, Dr. Janeway was serving as Health Commissioner of New York City. Probably no other teacher of medicine in the late nineteenth century could have imparted so well to his students, about to enter the practice of medicine, the principles of public health, and the message that clinical knowledge of the ways of communicable diseases was of infinite importance to the health and welfare of any community. This might well have been news to the rank and file of potential doctors. Graduating as an M.D. in 1879, Chapin interned at Bellevue Hospital and then returned to Providence to begin the practice of medicine.

But Chapin, as one of his biographers has said, “lacked the right temperament to make a success as a general practitioner” (1). To offset his practice, which was far from flourishing, he took on some extra assignments. He became an attending physician at the Providence Dispensary and began a brief period of service as a physician at the Rhode Island Hospital. He also associated himself with the Biological Department of Brown University where he was active in establishing a program of premedical studies. In the fall of 1883, he was elected to the position of Superintendent of Health of the City of Providence, a post for which he was eminently suited. He immediately applied himself diligently to his new duties—so much so that he quickly won international distinction in the fields of urban sanitation, antipollution measures, the control and prevention of tuberculosis, and the reduction of infant mortality.

To maintain that Chapin did his work as a city health officer with meticulous care is to understate the case. So complete were the statistics on communicable disease which he reported to the Providence Board of Health that long after Chapin’s death, W. H. Frost of Johns Hopkins, and that distinguished Harvard statistician, Professor E. B. Wilson, continued to use them as a constant source of data for their sophisticated biostatistical and mathematical studies on common infectious diseases.

Chapin’s book, Sources and Modes of Infection, originally published in 1910, went through three editions. As the title indicated, the book really had all the earmarks of an early text on epidemiology. Indeed, a more concise definition of contemporary epidemiology could hardly have been made at the time. So Chapin had begun to direct his thoughts to this subject at least 17 years before the AES came into existence. Small wonder that he was elected the first president. So pervasive
was his influence in the Society that after his death in January 1941, at the March meeting of 1942, the members passed a series of resolutions commending his long years of devoted service to the Society. This practice had been seldom used, and the tribute to Chapin indicates the respect with which the AES regarded him. The resolutions read as follows:

Dr. Charles Value Chapin (January 17, 1856–January 31, 1941) during his life of services for the public health not only showed the highest qualities of courage, invention and administrative competence as an officer of civil government, but he was a leader and a scholar in the education of physicians and health officers in the principles of preventive medicine, for the individual and the community.

Over and beyond these signal accomplishments, Dr. Chapin created new methods, a finer art, a more exact science in the hospital care of communicable disease.

He was the first health officer in our country to apply epidemiological and statistical analysis to problems and results of health administration.

As a founder of the American Epidemiological Society, a pioneer and frequent contributor to the science and practice of epidemiology, Dr. Chapin was respected and honored everywhere, and was held in warm affection by those privileged to know him in the close fellowship of our meetings.

One can well imagine how Haven Emerson, who had had a part in the preparation of this memoir, had put his heart into these words. They described all the qualities that he himself had striven for, and not a few of which he had been able to attain.

The City of Providence through its Rhode Island Medical Society also recognized Dr. Chapin’s stature and accomplishments and has perpetuated his memory in an annual award and an oration given in his honor. In the past 20 years, six members of the AES have been honored by receiving this award.

**Haven Emerson**

Haven Emerson (1874–1957) was a tall, ascetic friendly looking man, who epitomized the title which has been universally bestowed upon him—"the last of the Puritans" (Fig. 2). He was, indeed, almost the last of the line of those altruistic nineteenth century pioneers in the field of public health such as Edwin Chadwick and John Grennon of London; and W. T. Sedgwick, his mentor in Boston, and Hermann Biggs of New York State—men who spent their lives in the improvement of the urban environment, and the promotion of social betterment. They were motivated by the ideals of the compassionate physician, and by altruism, coupled with an adequate knowledge of the medical sciences. But above all, Emerson was truly a great pioneer both of epidemiology and public health in this country. Throughout his entire professional career he was an ardent foe of filth as a cause of disease. He pursued this cause with an almost religious fervor. Also, he avoided anything that smacked of privilege. In the days when travel by railroads was a major means of transportation he preferred to ride in the day-coach on long trips instead of in Pullman cars; for, as he often said to me, he had a horror of pampering himself, and I suspect that he felt that by his own example, he might impress upon others similar twinges of conscience when they enjoyed similar bits of indulgence.

Born in New York City, the son of a physician and grand nephew of Ralph Waldo Emerson, he graduated from Harvard in 1896, and Columbia University’s College of Physicians and Surgeons (P & S) in 1899. He carried on a general practice in New York City, and taught physiology and clinical medicine at P & S
until 1913. Subsequently he entered upon a career in public health which lasted for the next 40 years, practically until the time of his death. He had begun when the field offered little; he left it in the mid-twentieth century in a far more advanced stage. Not only did he treat what was probably the last case of cholera which occurred in New York City, but he entered the arena when hopeful reforms in public health were being blocked, as they all too often fell on the deaf ears of an indifferent public, and occasionally also of a sizeable fraction of the medical profession. Suffice it to say that Haven Emerson met this challenge boldly and made valiant attempts to change prevailing attitudes and practices. In 1914 he became Sanitary Superintendent, and a year later Commissioner of Health of New York City.

Shortly thereafter, when the disastrous epidemic of poliomyelitis struck that city in 1916, he did his best to combat it by using the weapons to which he himself was dedicated, i.e., cleanliness, the isolation of patients, even the restriction of travel for the entire juvenile population of New York. He had infinite faith in these methods and he strove mightily to enforce them. There were many sighs of relief when this epidemic came to an end in the fall of 1916, and Dr. Emerson was glad to escape from his duties as Commissioner of Health by seeking refuge in the Medical Corps of the United States Army. World War I had broken out in April 1917 and he was appointed Epidemiologist to the American Expeditionary
Force in France. He had a rewarding experience in France to which the author can personally testify. At the time of his death Haven Emerson had behind him a long life of service devoted to the public health. He had been Professor Emeritus of Public Health Practice at Columbia University since 1940, a title bestowed on him after 18 years of teaching there. Besides being the first Secretary-Treasurer of our Society, a position he occupied for 12 years, he was a cofounder. Of his version of the circumstances under which the AES came into being, we have already heard. Needless to say, he had given a special mold to it during that period. It occupied a major place in his heart.

Imbued with a fervent, almost religious, devotion to the awakening of lazy members of the medical profession and politicians indifferent to his views, Haven Emerson preached that all citizens were entitled to know what public health had to offer. He believed that it was at least their due to have a standard of living compatible with the maintenance of health. Many a public health worker did not agree with him but admired his fervency and tenacity. Causes that he espoused were many and diverse: He worked to achieve the standardization of diagnostic nomenclature; he was instrumental in the establishment of several health centers widely distributed throughout New York City; he served on innumerable committees which had as their objectives campaigns to control both acute and chronic infectious diseases, particularly children's diseases; he concerned himself with urban surveys of the distribution of hospitals and hospital care in various cities; and in later years of his life, to the health needs of the American Indian. In the long struggle to attain his ideals and goals he may well have been guided by sentiment and instinct more than by knowledge of epidemiology as the scientific basis of preventive medicine, but this instinctiveness, the urge to do what he thought important was where his strength lay. His creed was well expressed in a presidential address before the American Public Health Association, delivered in 1934. At the time he said:

If I were challenged to describe elements necessary to assure further improvement of human health in our associated nations, these three would seem real and pressing: some increase in effective intelligence; something of a spirit of religious devotion, even to the point of self-denial in material possessions and accessories of today's life; and lastly courage to apply what biology has taught us to believe.

One cannot but admire this extraordinary man and his utter devotion to his ideals (2). The membership of the AES will always owe him a debt and should recognize that it was his spirit of dedication to a cause combined with discerning leadership, which was instrumental in bringing the Society into existence. He carried on as secretary for more than a decade, and it was his spirit which prevented the AES from lapsing into a pedestrian sort of society—like many another which all of us have known.

Wade Hampton Frost

Wade Hampton Frost (1880–1938) an outstanding charter member, Professor of Epidemiology at Johns Hopkins School of Hygiene and Public Health, was an entirely different sort of character (Fig. 3). He was a man of great talents, a whimsical sense of humor, and a penetrating knowledge of his subject, as well as a consciousness of how to deal with all kinds of people. Frost had brought himself up, by his own bootstraps so to speak, to be the most modern, forward-looking and
astute epidemiologist of his time. He had seen the light well in advance of many others. Although of unprepossessing appearance he was a man of arresting personality. Trained by the school of hard knocks he had learned how to get along with students and layman alike and, most of all—with colleagues.

Frost was born in 1880 in a village adjacent to the Blue Ridge Mountains of Virginia, the seventh son of a country physician in a family of eight children. It is said that his early education was informal in that he was taught at home by his mother, who must have been a remarkable woman to have undertaken the primary education of such a large family. In 1898, after a few years of formal schooling, he attended the University of Virginia and soon thereafter its medical school, from which he graduated in 1903. After internship, he immediately joined the Public Health Service and was soon given his first epidemiological assignment which came in the form of a campaign against a yellow fever epidemic then underway in New Orleans. The role of the mosquito in yellow fever had already been demonstrated and effective methods to eliminate mosquito breeding places had been devised. Frost and other members of his team could therefore proceed with well designed plans to combat the disease. The expedition proved an experience which determined the way in which his future was to be directed.

By a fortunate turn, Frost was next assigned to the Hygienic Laboratory in Washington where he came in contact with such men as Rosenau, Anderson, Goldberger, Lumsden, and others. Shortly thereafter, in 1910, singlehandedly, he embarked on his first field study of that “new disease”—poliomyelitis. So little was then known about the epidemiology of this infection that with only 1 year’s experience, Frost determined to write a critique, a \textit{précis} as he called it, of the “new"

\footnote{In the preparation of this short biography the author has drawn heavily on the introduction to the \textit{Papers by Wade Hampton Frost} (K. F. Maxey, Ed.) (3).}
SOME CHARTER MEMBERS

Leslie Tillotson Webster

Leslie Tillotson Webster (1894–1943) was a dynamic character who in his early days was a man of young and radiant energy (Fig. 4). Unfortunately he died at the early age of 49, long before he had completed the tasks he had set for himself. He worked hard and played hard at all sorts of extracurricular activities—music,
gardening, outdoor sports such as skiing with his wife and boys, tennis and golf, but most of all, sailing. To say that he was accomplished in all manner of activities is not enough. For example, immediately after his graduation from the Johns Hopkins Medical School he volunteered to man one of Dr. Grenfell's Hospitals in Labrador and on his very first day at this post he was faced with the problem of amputating a gangrenous leg from a young adult whom he had picked up in an almost moribund condition and brought to the hospital for this purpose. Webster had not intended to go into surgery but, having studied the steps of the operation in the surgical textbook the night before, he performed the operation successfully and the patient did well thereafter.

After finishing his tour of duty at the Grenfell Hospital he set himself the task of writing a critique of the problems which beset the population of fisher folk on the Labrador coast, from industrial, socioeconomic, religious and political points of view, an undertaking which was to interest him for the rest of his life.

Leslie Webster was born in 1894, brought up in Mt. Vernon, NY, attended Amherst College, and graduated third in his class of 93 at the Johns Hopkins Medical School, in 1919. After serving a year as an assistant in Pathology on the service of the Johns Hopkins Hospital under William G. MacCallum he joined the Rockefeller Institute where he was to remain for the next 23 years as an assistant on
Dr. Simon Flexner's immediate staff. He became a member of the Institute in 1934. From the beginning his special talents were evident and he was chosen to pursue a project which had become dear to Dr. Flexner's heart, namely, that of experimental epidemiology. For these studies he used populations of mice as models in detecting the manner in which epidemics had their genesis, ran their course, and eventually terminated.

The reader should be reminded that in the early decades of the twentieth century there was still a good deal of mystery surrounding the origin of epidemics: how they arose and what the circumstances were which brought them about and led to their decline. To solve this mystery, Dr. W. W. C. Topley (assisted by Wilson and Greenwood) in England had previously started experiments on mice, and over a period of some 25 years made a series of observations that still remain as standards. Topley's premise was that one way to solve the mystery of epidemics, was "to turn our backs on the natural world and to simplify our conditions until the number of variable factors reached manageable proportions and then to see what happens when we hold some factors constant and vary others" (6). During this period (1920–40), Webster was also active in developing the new science in the United States. In his experiments, he employed not only large populations of mice but rabbits and chickens as well. Both experimenters reached the conclusion that the resistance of the host had been grossly neglected in the epidemic scene by those who had an understandable desire to attribute properties of increased "virulence" to the offending microbial agent as the main cause of epidemics.

Webster interpreted his results as indicating that the bacterial etiologic agent did not vary in virulence and indeed concluded that levels of virulence might remain stable for years under the controlled conditions of host and environment that he tested. It was the condition of the host and secondarily the environment that mattered in precipitating epidemics. Topley and his team were inclined to agree in part with this contention but as they had used both bacteria and a virus in their experiments, they were unwilling to admit that fluctuations in virulence never occurred. Today, with epidemics of virus diseases in the ascendancy, Topley's views may have taken precedence over Webster's—particularly with respect to influenza epidemics.

Webster went further in his explorations and proved that variability in host resistance was occasionally regulated by inborn or genetic factors which might have considerable bearing on immunity, and on the spread and acquisition of infectious diseases. He was able to breed special strains of mice which were either susceptible or resistant to bacterial and viral infections, much as the plant geneticists had bred resistant strains of grain such as corn, wheat, and rice. In Webster's mice, the conditioning influence was interpreted as being genetic since there were no indications of any specific factors such as serum antibodies to explain the resistance.

It is a matter of some interest to speculate on the reasons why later investigators have been more or less loathe to pick up the trail where Topley and Webster left off. These two men had only scratched the surface of the important subject of experimental epidemiology, but the impact that they had made in the 1920s was of such a telling nature that others—for almost two generations now—have apparently considered the subject settled.

It was natural that Webster was elected to charter membership in the Society, and the exciting views on his chosen subject created many a lively discussion at the early meetings. He set the initial pace for the Society by giving two scholarly
reviews on the subject, one at the Society's first meeting and the other at its eighth, in 1931. Major Greenwood, the British epidemiological expert was present as a guest at the meeting in 1931, and the two had it out together. Dr. Greenwood had been a long-time colleague of Topley's, and as such could act in the capacity of a sharp critic. It was a discussion which I shall not soon forget. I was not a member of the AES in 1931 but attended this meeting only as a guest. Dr. J. D. Trask and I had been listed on the program to present our experiences with cases of abortive poliomyelitis in the recent epidemic which had beset New England and New York City. It was the first paper on poliomyelitis that we were privileged to present before such a critical audience. Dr. Greenwood happened to comment favorably on our work and urged us to continue it. It was this kind of support, made possible by discussions at meetings of the AES, that was singularly helpful to young men about to start on a career in the field of epidemiology. Certainly, it made me eager to join a society of this type.

I had enjoyed a close friendship with Dr. Webster dating from Johns Hopkins Medical School days when we were classmates, and afterwards as colleagues on the faculty of that institution. During the period 1927–34, we had taken many a walking trip through the Berkshire Hills, many a canoe trip in the Adirondacks, and many a cruise down the coast of Maine on Webster's yawl. On these trips there had been ample opportunity to review his theories on immunity—Draper's and Aycock's too—and the manner in which the AES, and Webster himself, reacted to them.

In 1933, Webster's interest took another turn. The occasion was an assignment from Dr. Flexner to investigate an extensive epidemic on encephalitis of unknown type which was affecting the cities of St. Louis and Kansas City, Mo. Such was the urgency of this request that he left his precious yacht unattended, in the little harbor of Cutler, ME, and hot-footed it immediately to St. Louis with instructions to use his highly susceptible mice, which he had been at such pains to breed, in attempts to isolate the then-unknown agent responsible for the epidemic. The discovery of St. Louis encephalitis virus is usually credited to Webster, but this achievement was also shared by a local group led by Muckenfus. Other discoveries which involved neurotropic viruses came thick and fast and for the next decade Webster skyrocketed to a position as an acknowledged authority on neurotropic viruses such as: St. Louis, Eastern equine encephalitis, rabies, louping ill, and Russian spring summer viruses—even poliovirus. He was one of the first men to devise a proper neutralization test in mice for the detection of antibodies to neurotropic viruses. His activities were cut short by his death in 1943 at the age of 49 from a cerebral hemorrhage. At the time he was doing important work during World War II in association with the Commission on Neurotropic Virus Diseases of the Army Epidemiological Board.

W. Lloyd Aycock

W. Lloyd Aycock (1889–1951) was a large man in every sense of the word, full of energy and who radiated the confidence that comes with the conviction of

\[\text{Although Webster had published many papers on the subject of experimental epidemiology, none of them could be considered as an overall review. Three years after his death in 1943, at the request of his widow, Mrs. H. T. White, Dr. J. Casals of the Rockefeller Institute pieced together significant portions of Webster's work and published them in a review article (7).}\]
being an acknowledged authority in his field (Fig. 5). The field in which he was especially interested was the epidemiology of poliomyelitis. Thus, he was described by one of his biographers at the time of his death in 1951, as “the man who had contributed more to the subject of poliomyelitis than anyone of his time” (8).

Early in his career, Aycock’s interest in “polio” had been aroused during the great epidemic of 1916 in New York City; and it was there that he came in contact with authorities on the disease such as Simon Flexner, H. Noguchi, and H. L. Amoss. In the 1920s he investigated the role of milk in the spread of poliomyelitis in two epidemics, one of them in Cortland, NY\(^3\) and the other in England. In connection with the New York observations he met Dr. Godfrey, who must have immediately recognized Aycock’s talents and quite superior knowledge of epidemiology. It was a foregone conclusion that he should have become a charter member of the AES.

One of Aycock’s outstanding characteristics was a readiness to indulge in spirited argument in order to defend this or that theory. Woe to the opponent who was either not too sure of his ground, or not too clever, because he was bound to get worsted. In the display of these talents Aycock qualified as an ideal member of

\(^3\) See Emerson’s description of this epidemic in his account of the meetings of the Biggs Club.
the AES. Unfortunately, throughout the latter part of his professional career he suffered from a hip ailment which forced him to walk with a sturdy cane but this disability failed to dampen his spirit. The illustration in Fig. 5 shows him in a characteristic mood, his right hand on the cane, and an expression apparently indicating that he had just gotten the better of an argument.

A native of Georgia, Lloyd Aycock obtained his medical degree at the University of Louisville, in 1912. After graduation he temporarily became a bacteriologist at the New York Post-Graduate Medical School. Within a year, and with the outbreak of World War I, he entered the Medical Corps of the United States Army and was assigned for a short tour of duty as Laboratory Director at Base Hospital No. 6 at Savenay, France, a small town near St. Nazaire which served as a port of disembarkation for American troops in 1917. It was there that I met him for the first time.

With the war over, Aycock became associated with the Research Laboratory of the Vermont State Board of Health and in 1923 he was put in charge of the Harvard Infantile Paralysis Commission. Also at this time he was appointed Associate Professor (later Professor) of Preventive Medicine and Hygiene under Milton J. Rosenau at the Harvard Medical School.

His contributions to poliomyelitis, which occupied him for some 30 years, were extensive and involved many aspects, including therapy. But his main endeavor continued to be a demonstration of the manner in which infections, both overt and inapparent, are acquired and spread. He investigated the pattern of age-specific immunity of urban and rural populations to poliomyelitis and also to diphtheria and found them to be so close, that he (and his colleague Kramer) deduced that these two agents, one a virus and the other a bacterium, must have similar means of spreading (9). This, they rightly concluded, was by personal contact through the agency of subclinical (inapparent) infections. In order to gain this knowledge, Aycock and Kramer had used to advantage the then practically unknown techniques of detecting antibody in the serum of convalescent patients and of normal children and adults, i.e., serological epidemiology. They were hardly aware of the triumph they had scored, but after a lapse of some 20 years the significance of their observations became more evident. In a small book, for which Aycock had set the type and which he had bound himself (10), he presented a chart showing the parallel manner in which immunity to poliomyelitis and to diphtheria was acquired (see Fig. 6). This was of sufficient importance to deserve a key place among his life-long contributions to epidemiology, of which there were many.

Had Aycock settled for this demonstration alone, his contributions to the science of epidemiology might have been greater, but in the late 1920s he had already convinced himself that another powerful mechanism was operative. Thus, he believed that resistance to poliomyelitis was due to—autarcesis. The term was derived from the Greek words: "αυτός," self; and "ἀπκέω," keep off. It is said, and I believe it thoroughly, that Aycock himself was the only one who really knew how to pronounce this term correctly. But, be that as it may, in his own words autarcesis that meant to imply: "(that) protective power against disease which exists in the body by reason of a normal or balanced physiological activity, as distinguished from immunity, that form of resistance which is built up as a result of invasion of the body by the disease producing agent."

The AES was composed at this time of men who loved to argue on epidemiological theory with a keen opponent. So, when Aycock took the floor it meant that
arguments would go on for at least half-an-hour or so. A small fraction of the members would absent themselves during this period.4

Aycock's main difficulty at that time, was that he and others believed that all strains of poliomyelitis virus were identical. This was before the family of polioviruses had been broken down into three serotypes, although in 1931, Burnet and Macnamara had separated the family into two types. Thus, when Aycock found that a child who had recently recovered from paralytic poliomyelitis lacked convalescent antibody to the particular strains of poliovirus used in his neutralization tests, he concluded (erroneously) that resistance to poliomyelitis must have been acquired by the child in a manner other than by the development of specific immunity revealed by the antibody. So, he set for himself the task of figuring out the way in which such immunity actually was acquired.

It might seem that it was unnecessary for Aycock to have done so, considering that the time was not really ripe for such theorizing. The edged tools essential to answer such theoretical questions had not yet been invented. Nevertheless, efforts to solve the problem by talk evoked an interest which reached the boiling

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4 Although not then a member of the AES, I was repeatedly informed by Dr. Webster (a charter member) of this relatively unimportant schism among its members.
point in certain of the early meetings of the AES. This was the stuff upon which
the reputation of the AES was built.

Dr. W. H. Park, the Director of Laboratories of the City of New York, was
at the time an important and vigorous member of the AES and also an ardent
student of poliomyelitis. He took up some of Aycock’s ideas and entered these
discussions with a vim. He had recently acceded (in the early 1930s) to the editor-
ship of the so-called Polio Bible, a volume supported by the Josiah Milbank
Foundation, which appeared in 1932 (11). In this publication Park summed up
his understanding of Aycock’s views in the following section:

The Theory of Maturation

Resistance to poliomyelitis certainly increases with age. A part of this resistance
is almost undoubtedly due to a specific immunity caused by infection with the
virus. A part is, probably, though less certainly due to a resistance which increases
with age, which is inherent in maturity, and which is not due to exposure (11).

In the middle years of Aycock’s career, he shifted from efforts to promote his
autarcesis theory to a defense of the use of convalescent serum in the treatment
of clinical poliomyelitis. After vigorously supporting this treatment for some few
years, the results of his controlled trial in the 1931 epidemic, and the findings of
others, indicated to Aycock that he had been on the wrong track and he suddenly
switched to the opposite point of view. It must have taken considerable courage
on his part to do so.

I have dwelt on these features perhaps unduly, but it was on just this kind of
spirited discussion that Aycock and others engaged in that the AES thrived, par-
ticularly in its early years. He will always be remembered by the Society as a char-
ter member who had set the pace, and had never lacked for courage in defending
his views before a highly intelligent and critical audience.

Hans Zinsser

Hans Zinsser (1878–1940), was one of the most colorful figures among the early
members of the AES. His reputation as a microbiologist had become established
by his coauthorship (with P. H. Hiss) of the most distinguished of American text-
books on bacteriology in the early twentieth century. By 1915 almost every medical
student was familiar with his name. Zinsser was a man of extraordinary talents,
practically a universal genius—productive in science, education, literature and
poetry, music and the arts. I was fortunate enough to have had an early contact
with him6 and throughout his whole life he represented for me the epitome of
superb technical ability, medical philosophy and public health statesmanship. In
any walk of life his able mind, his alert, agile carriage and splendid physique would
have made him distinguished.

Born in 1878 in New York City of German parentage, he received a major
part of his early education at home, particularly in the study of the violin and
the piano, although 2 years of schooling were spent at Wiesbaden, where an uncle

6 In 1918, while a medical student, I had taken a year off from medical school to sign
up as a civilian employee, with the assimilated rank of private, in the Medical Corps of
the United States Army, and had the opportunity of serving as a technician for a few
months in France under Major Zinsser at the AEF’s Central Medical Laboratory at Dijon,
France.
lived. He entered Columbia University imbued with a desire to study literature and to pursue the career of a writer but he switched to medicine some time in these formative years and entered Columbia's College of Physicians and Surgeons in 1899. He must have attained a considerable degree of self-reliance by this time. And, he was probably more European than American in his point of view. Most of his summers had been spent abroad. During a college vacation when he was 20 years of age, he took a walking trip through France and from that time forward became an ardent admirer of the inventiveness and cleverness of the French people. This was unusual for a discerning youth of German background.

Of Zinsser's subsequent years we shall have to skip over briefly. In 1910, he received an appointment at Stanford University in California and shortly became the Professor of Bacteriology and Immunology at that institution. After 3 years he was similarly engaged at Columbia University's P & S (from 1913–1923), and in 1923, at the age of 45, received the same title at Harvard—a position which he held until the time of his death.

Quite apart from his scientific accomplishments, which were many and distinguished, the type of life he led brought him into contact with many an outstanding contemporary intellect in various branches of science and philosophy. Especially revealing was his devotion to Charles Nicolle, the medical scientist of louse-borne typhus fame, who was also a philosopher and a poet. Nicolle, besides being a Nobel laureate, was Director of the Pasteur Institute in Tunis. Starting in 1928, and for years thereafter, Zinsser periodically sought refuge in Nicolle's laboratory in North
Africa just to have the privilege of being associated with the great Frenchman.

The impression I had of Zinsser during the height of his career was of a man of great mental and physical vigor who was forceful and articulate in expressing his views. He had kept lean and muscular, fit for strenuous exercise as well as long hours of work in the laboratory—so different from the average American college professor. I was one of many who continued to be fascinated with the personality and thoughts of Hans Zinsser in the 1920s and 1930s. A list of those students who had been inspired by his teaching includes John F. Enders, the Nobel laureate of tissue culture fame, and Jack Snyder, until recently, Dean of the Harvard School of Public Health, and a member of the AES.

Two of Zinsser's books, *Rats, Lice and History*, and *As I Remember Him*, are classics. The latter, written in the third person, is his autobiography. He achieved in both books that most difficult task of using technical terms and important scientific concepts yet making them both intelligible and readable for the general public.

He entered into discussion at the AES meetings with a vigor and zeal which reflected his whole character. Sometimes the discussion became so heated that he would ask his opponent if he would mind stepping outside for a moment so that the argument could be more easily settled—as if to seek some place in back of the woodshed. When after 10 or 15 minutes, the two of them reappeared, apparently none the worse—and possibly the better for the experience, an anxious audience breathed a sigh for relief. It had feared mightily for the fate of Zinsser's opponent.

*Eugene Lindsay Opie*

Eugene Lindsay Opie (1873–1971), one of the charter members of the AES, died in 1971 at the age of 97. By virtue of sheer determination and colossal industry, he had kept at his laboratory bench at Rockefeller University almost to the end. Indeed he served that institution for 31 years after his retirement from his university position at Cornell.

In 1927, when invited to become a charter member of the AES, he was 54 years old; after 13 years of active membership, he resigned in 1940, at the age of 67. It is easy to understand the cause of his resignation. The status of Emeritus Membership had not yet been established by the AES, and Dr. Opie did not wish to be bound to the obligation of having to attend a certain number of meetings every so often in the years of his "retirement."

At the very outset of his career, Opie had worked in Welch's Department of Pathology at Johns Hopkins where he observed that lesions in the Islets of Langerhans were related to the pathogenesis of clinical diabetes. His book, *Diseases of the Pancreas* (1902), became a classic overnight. This contribution brought him instant recognition as a discerning young pathologist, capable of independent and original work. Later, during World War I, he became an important member along with Rufus Cole, O. T. Avery, A. R. Dochez, T. M. Rivers, and Francis Blake, of the Army's Pneumonia Board where he was to deal with postmeasles and post-influenzal pneumonias. In the latter part of his career, he turned to the interpretation of liver pathology and the mechanisms of liver function. He served as Professor of Pathology at three medical schools: Washington University in St. Louis, MO; the University of Pennsylvania; and the College of Medicine of Cornell University in New York City. But Opie was more than an orthodox pathologist. His investigations on the clinical epidemiology of tuberculosis which started a whole
new trend are described in another section of this book. He was an interpreter of the pathogenesis of disease and the distribution of the responsible microbial agent, both within the body and outside of it. He used not only methods common to pathological anatomy, but to microbiology, immunology and biochemistry. It was this dexterity in the use of variegated methods and his discernment that made him an epidemiologist. As the late Dr. Peyton Rous, a Rockefeller colleague, put it, Dr. Opie was an "imaginative artist" whose discoveries became "the basic commonplaces of modern pathology" (12). At the time that he received the Jesse Stevenson Kovalenko Award of the National Academy of Sciences, the citation was: "For outstanding contributions in the medical sciences and a life of exemplary devotion to medical education and inquiry into the origins of disease."

Opie was a man of fabulous industry and devotion to duty. A story is told of him that he was seen by a friend as he was going to his laboratory in the Rockefeller University on a Saturday morning. His friend said: "Didn't you know it is Saturday?" and, Dr. Opie replied: "Didn't you know I am retired?"

I was most fortunate to have been associated with Dr. Opie early in my career. During the mid-1920s, he had arrived from St. Louis to become the new Director of the Henry Phipps Institute in Philadelphia—an institution for the study and control of tuberculosis. The Phipps Institute was only a few blocks distant from The Ayer Clinical Laboratory of the Pennsylvania Hospital, where I was working at the time. One of Opie's first kind acts was to visit me in my laboratory and to invite me to attend his staff meetings. To this invitation I responded with alacrity. It turned out to be a rewarding experience. Opie’s staff at the time con-
sisted of: Drs. Joseph Aaronson, Stuart Mudd, who was soon to become Professor of Microbiology at the University of Pennsylvania, Max B. Lurie, Jules Freund cf adjuvant fame, and Jacob Furth, who was to make a name for himself in the leukemia field.

One incident of Opie's Philadelphia years I shall never forget. It occurred, I believe, in the winter of 1927–28. Opie was then president of the Philadelphia Pathological Society, and I was the young secretary in charge of programs. This Society had recently created an award known as the Gerhard Medal—to be bestowed annually on an outstanding pathologist. The medal memorialized the work of that young Philadelphia physician, W. W. Gerhard, who had gone abroad in the early nineteenth century to study under Louis in Paris; on his return to his native city he had proceeded to make the distinction between typhoid fever and typhus from his studies on pathological anatomy in fatal cases of the two diseases.

The first recipient of our medal had been William H. Welch. A year or two later it had been decided that the award was to go to Theobald Smith of the Rockefeller Institute at Princeton. The secretary of the Society was supposed to handle all arrangements and to have the medal duly inscribed. These tasks I proceeded to try to do and had received a prompt and favorable reply from the company involved in the engraving. But the day of the award came and we still had not received the medal. Some of the other officers of the Society were in an unfriendly mood about the situation and, needless to say, I was on the receiving end. Feelings ran high among them that I had bungled the whole matter. If the medal had been accompanied by a monetary award, the situation might have been different, but this was not the case. The responsible company had assured me that the inscribed medal, would be delivered at the College of Physicians of Philadelphia, where the meeting was to be held, at 8:00 PM. But 8:00 o'clock came—and still the medal had not arrived. Dr. Smith was asked to give his lecture first—before the presentation was made, and this he did. By the time the address was finished—still no medal. Yet, Dr. Opie, who was in the chair took it all very calmly and as he arose to make the presentation, the remaining officers of the Society were agog to see what he was going to say. In the meantime, Dr. Opie, who knew Dr. Theobald Smith well, had noticed an antiquated inkwell which adorned the huge desk at which he had been seated; and with his accustomed ingenuity he had stealthily proceeded to wrench the hinged round metal top off the inkwell. No one in the audience had noticed this action, but, as Opie slowly rose to his feet he held a round metal object of appropriate size in his hand. And with a sudden sly, but amused, look in my direction he said that this beautifully sculptured medal was the highest award that the Philadelphia Pathological Society had in its power to bestow. It was but a small example of the kind of resourcefulness that characterized Eugene Opie.

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