

Chapter 3

THE EARLY YEARS

THE SECOND ANNUAL MEETING

The second annual meeting took place in New York City on May 27, 1885. President A.L. Loomis called the meeting to order at 3 p.m. John T. Nagle, M.D. of New York presented the Association with the report of Daniel Draper, Ph.D., director of the New York Meteorological Observatory from 1881 to early 1885, accompanying which were tables showing the daily mortality from pneumonia for the corresponding periods. Pneumonia was a common disease in New York City and attracted a great deal of attention because of its high mortality rate.

Loomis had the opportunity to make up for his absence from the first meeting, when illness prevented him from occupying the rostrum as president. In a well-received address, he indicated that the Association was organized so that medical men from different sections of the country might use their different views and experiences to try to determine the therapeutic value of the various localities alleged to have the power of arresting or curing chronic diseases of the respiratory organs. He emphasized that one needed only to read the history of almost any chronic disease, from the pens of recent European writers, to realize what a major part of their treatment consisted of advice to spend a variable period in this or that health resort or to take the waters at one of the well-known mineral springs. He stressed that neither in climate nor in mineral waters was Europe superior to America, only in its more thorough system of employing these methods of therapy. As an example of what was available in this country, he gave a brief description of the Adirondack Cottage Sanitarium* organized by Dr. E.L. Trudeau, who deserved the credit for

* The terms *sanitarium* and *sanatorium* have been preserved when each is part of a proper name: hence, Trudeau's "Adirondack Cottage Sanitarium," but the "American Sanatorium Association." Although the *Oxford English Dictionary* states that the words are synonyms (nevertheless identifying *sanitarium* as "quasi-Latin" and its use as "chiefly confined to the U.S."), René Dubos has offered a more substantive look at the two terms: "It is no accident, I believe, that the pioneers who popularized the rest cure used the word *sanitarium* instead of *sanatorium* to designate the special institutions devoted to the treatment of tuberculosis. *Sanitarium* comes from the root *sanitas*, and implies the type of healthy living in a salubrious and pleasant environment that would have pleased the goddess Hygieia. It remained the word of choice as long as faith in the healing power of nature prevailed. *Sanatorium*, from *sanare* (to treat), replaced *sanitarium* when active forms of treatment such as collapse therapy, surgery, and chemotherapy, became the vogue. The present trend to the expression "tuberculosis hospital" symbolizes the fact that once more Aesculapius has gained the upper hand over Hygieia." (Dubos RJ: *The philosopher's search for health*. Trans Assoc Am Phys 1953; **66**: 36.)

be directed to provide for a dinner, which would take place on the evening of the last day of the meeting. *The New York Medical Journal* was given the rights to publish all papers read before the Association, subject to conditions for publication of a volume of *Transactions* as was made for last year. Among the members from Philadelphia, William Osler was listed (with his address as 131 S. 15th Street.)⁶

Dr. Pepper's presidential presentation, a very scholarly dissertation, was entitled "A Contribution to the Climatological Study of Consumption in Pennsylvania."

The first paper was delivered by A.L. Loomis on the effects of high altitudes on cardiac disease. He related a series of cases in which ventricular dilatation was the cause of sudden development of severe dyspnea, which was in turn the start of a fatal illness due to the effects on the circulation of the change from low to high altitude. The second paper was presented by Henry Newell Martin, professor of biology at The Johns Hopkins University, and Frank Donaldson, Jr., one of his students, who gave a preliminary account of experiments relating to the circulatory and respiratory changes observed in animals placed in the pneumatic cabinet. In view of the great and sudden fall in arterial pressure when the animal was breathing outside air and the air within was rarefied, they concluded that the air in the cabinet should never be suddenly rarefied and that the sudden fall depended upon an increased blood flow to the skin and an accumulation of blood in the distended veins. They believed that before accepting an individual for treatment by pneumatic differentiation, the physician should perform a very thorough examination of cardiac function. It was also their belief that older persons with possibly atheromatous arteries were not proper subjects for treatment in the pneumatic chamber.

Several other papers at this session related to the use of the pneumatic chamber. Herbert F. Williams and Vincent Y. Bowditch discussed their experience with the use of pneumatic differentiation in the treatment of pulmonary tuberculosis. Isaac Hull Platt described the physics and physiological action of pneumatic differentiation.⁷

Dr. William Geddings discussed Aiken and Thomasville as types of inland health resorts of South Carolina and Georgia. Other papers were those of H.D. Didama on "The Health Resorts of Mexico"; E.T. Bruen's on "The Southern Adirondacks"; E.W. Schauffler's on "The Climate of El Paso, Texas"; and A.N. Bell's on "Southern Pines Park; A New Winter Health Resort." William Matthews discussed "Consumption Among the Indians," and R.G. Curtin, "Rocky Mountain Fever."

THE FOURTH ANNUAL MEETING

The fourth annual meeting of the American Climatological Association was held on May 31 and June 1, 1887, in the new physics laboratory of

The Johns Hopkins University in Baltimore with Frank Donaldson, Sr.⁸ (Fig. 8), of that city, as President. It was, from many points of view, one of the most memorable meetings of the Association. At the close of the afternoon session on Wednesday, the members visited The Johns Hopkins Hospital under the guidance of its architect—John Shaw Billings. The hospital was not to open until two years later, in May 1889.

In his Presidential Address, Donaldson pointed out that the most important contributions of the Association had been in relation to the effects of various climates upon respiratory diseases, especially pulmonary phthisis, which included among its victims fully one-third of those who died in active middle life. In most of the large cities in this country, the death rate from the disease had been from 14 to 15 percent, and in some it was as high as 17 percent. He pointed out the encouraging statistics from England and from the state of Massachusetts indicating a tendency toward decline in the death rate and the postmortem findings of many instances of halted tuberculosis. Donaldson gave an excellent review of the history of the development of our knowledge concerning



FIG. 8. Francis Donaldson, Sr.

the pathogenesis of tuberculosis, including the unity theory of Laennec and the experiments of Villemin who, in 1865, demonstrated that caseous matter introduced by inoculation into a healthy animal produced tuberculosis. The final proof of pathogenesis arrived with Koch's discovery of the tubercle bacillus, only two years before the founding of the Association.

Even at the time of Donaldson's address, however, the question still remained: could tuberculous disease be produced by the inoculation of anything but matter containing tubercle bacilli? Another question still unanswered was whether tubercle bacilli could settle and grow in healthy living tissue as opposed to pathologically altered tissue. It was evident that the bacillus found a better milieu in tissues weakened by disease, yet there was abundant evidence that as healthy animals, when inoculated, succumbed to the disease so healthy subjects rapidly yielded to the bacillus's onslaught. An example of this process was the occurrence of the acute miliary form of tuberculosis in apparently perfectly healthy persons. It was just becoming clear that tubercle bacilli were not present in the sputa of patients with other forms of pulmonary disease, and a variety of observations were indicating that the bacilli were rarely present in the lungs when absent from the sputum. The work of Koch had made sputum examination a necessity for physicians suspecting the disease. But the contagious nature of pulmonary tuberculosis was still incompletely understood, although there were many reports of individuals, especially wives and husbands, apparently contracting the disease from each other. Furthermore, as many individuals who were exposed did not develop the disease, it was difficult to establish the facts.

Donaldson concluded from all the information he could gather that there was, indeed, an inherited predisposition to the development of tuberculosis. His final conclusions were: 1) The presence of the parasite, the tubercle bacillus, was necessary for production of the disease; 2) There was a prominent element of susceptibility on a hereditary basis in about 30 percent of the cases; and 3) Poor hygiene and debilitating agents such as foul air, sedentary occupations, violations of the laws of health, other diseases, and prominently the soil-mixture, had a major effect on the development of tuberculosis.

One of the most interesting papers at this session presented experimental evidence supporting some of Donaldson's statements: a discussion of Edward Livingston Trudeau's studies entitled "Environment and its Relation to the Progress of Bacterial Invasion in Tuberculosis." In his experiments, three groups of five rabbits each were subjected to the following conditions: 1) Five were inoculated with tubercle bacilli, then confined in a small box and put in a dark cellar. In addition to being deprived of light, fresh air, and exercise, they were also given less than

the optimum quantity of food. 2) Five healthy rabbits were placed in a hole about ten feet deep, dug in the middle of a field, the animals being confined in a small box depriving them of light, fresh air, and exercise. They were furnished with a scanty supply of food while breathing in a chill and damp atmosphere. Although free from disease themselves, they were removed as far as possible from any accidental source of infection. 3) Five rabbits, having been inoculated in precisely the same manner as the animals in the first experiment, were at once turned loose on a small island with the best possible environmental conditions to stimulate their vitality. They lived constantly in sunshine and fresh air and soon acquired the habit of constant motion so common in wild animals. Four of the inoculated rabbits in group 1 died within three months and in all of them the injected lung was extensively diseased. In group 2, the five uninoculated and healthy rabbits placed in the damp pit were all living at the end of four months. In group 3, one of the five rabbits allowed to run at large died just one month after inoculation with tuberculosis. The four other rabbits remained in good health. Trudeau concluded that although one must not underestimate the pathogenic properties of the bacillus and its basic relationship to the production of the disease, the effect of extremes of environment on the resistance of the cells of the body to the infection was an element in this complex problem that should not be ignored.

Trudeau's paper was read by Dr. Alfred L. Loomis. The circumstances were recounted by Trudeau in his autobiography.⁹

Dr. Alfred Loomis had always been very friendly to me and had always taken an interest in my work both at the Sanitarium and in my little laboratory. I had a new proof of this when he wrote me in the fall of 1886 that he had presented my name for membership in two societies—the American Climatological Association [elected in 1885] and the Association of American Physicians [one of the original members, 1886]; that I had been elected to both and that he wanted me to write a paper for the Climatological Association which met in Baltimore the following May (1887). I had never belonged to any medical society or attended medical meetings, but I was much pleased at Dr. Loomis's interest and decided to write a short paper for the Climatological Association, describing the influence of extremes of environment on my inoculated rabbits. In the winter I wrote the paper . . . and we went to town in May so that I might be present at the meeting. . . .

I left my wife and children in New York and went down on the afternoon train to Baltimore with Dr. Loomis. It was the beginning of June, and terribly hot when we reached Baltimore that evening. I hardly slept at all that night. I don't think this was entirely due to the heat, however, as I was beginning to dread the idea of speaking in public before a large audience of doctors, and I am sure this kept me awake. The next day was just as hot and I could eat no breakfast. I went to the meeting and found the large hall packed with medical men. I sat next to Dr. Loomis and listened to the papers on the program, but it seemed a long session and the dread of having to speak before such an audience increased.

It was almost time for my paper when I began to feel dizzy and faint. I leaned over

to Dr. Loomis and said: "Doctor, I feel badly." He turned around and looked at me and said: "Get up and go out." I tried to, but just before I got to the door darkness overtook me and I fainted. The next thing I remember I was lying on the floor in the hall just outside the meeting room, and I could hear the hum of voices. Dr. Loomis was leaning over me and saying: "Where is your paper?" I gave it to him, and then lay there in a sort of half-conscious state listening to Dr. Loomis's strong voice as he read my paper. Then came loud applause, and soon Dr. Loomis came back and handed me the paper and said: "That was a good paper." Other men crowded around me and shook hands with me, and spoke of the paper and hoped I was feeling all right again. I got to my feet and walked out into the streets while somebody held my arm and I soon began to feel better.

This is my first experience at a medical meeting and the way I read my first paper. I was thoroughly ashamed of myself, but there was no help for what had happened, and I tried to lay my fainting entirely to the excessive heat. I found some comfort, however, later in the fact that my paper was noticed by many of the medical journals in this country, and that abstracts of it appeared in two or three of the well-known medical publications abroad.

When I got back to New York that night I vowed I would never go to a medical meeting again, but I have done so nevertheless on many occasions. I was a long time overcoming my stage-fright when speaking in public, and I am not so sure that I have quite done so yet. . . .

It was at the meeting of the Climatological, where I fainted, that I first met Dr. William Osler and Dr. William H. Welch and subsequently I came in contact with both of them when I attended the meetings of the Association of American Physicians in Washington and when my visits to Dr. Thomas's home in Baltimore became very frequent. Both of these great physicians, who had already made reputations which were not confined to this country, took an interest in my experimental work and from the first gave me their advice and support. Dr. Welch, who had worked in Koch's laboratory, took a special interest in my attempts to cultivate the tubercle bacillus, and it was a proud day for me when I sent him a tube containing a pure culture of the germ for demonstrations to the students at The Johns Hopkins University School of Medicine.

Dr. Osler was also keenly interested in my sanitarium and always gave the obscure and struggling little institution the support of his approval. In the first edition of his famous *Practice of Medicine*, published in 1893, he did not hesitate to refer approvingly to the Adirondack Cottage Sanitarium [Fig. 9] and the principles of treatment it

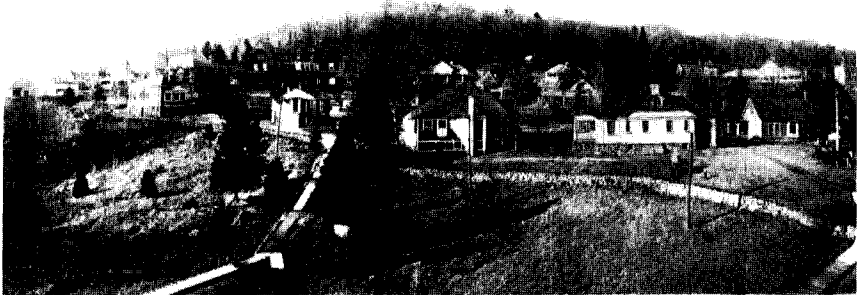


FIG. 9. The Adirondack Cottage Sanitarium

stood for. The support of his great name no doubt did much to attract attention to its work, both here and abroad.

When the National Association for the Study and Prevention of Tuberculosis, in which Dr. Osler was so prominent, was formed, I met him regularly at the early committee meetings, and it was no doubt greatly through his influence that I was elected the first president of this splendid national movement against tuberculosis. It was another red-letter day in my life when, at the first meeting of the National Association, in Washington on May 18, 1905, I stood on the platform with Dr. Osler and Dr. Hermann M. Biggs and addressed the great, earnest body of physicians and laymen before me.

Trudeau the man and the physician is vividly described by Henry M. Thomas, the first neurologist at The Johns Hopkins Hospital, who was a patient of Trudeau's at Saranac and remained his close friend throughout life:¹⁰

Dr. Trudeau, when I first knew him, was 40 years old and his health was as good as it ever became. Indeed, the first impression that he made on me, of a man in vigorous active health, abounding in energy and love of life, was only confirmed by a more intimate knowledge. . . . The only physical limitation . . . was his inability to take long walks, skate, run, swim, or row.

His days were full, and he passed quickly from one thing to another giving to each enthusiastic attention. At this time, Saranac Lake was a compact little village in which we were all thrown very closely together. A single stranger in town, or, indeed, a new dog, created remarks and had to be explained. There were not many very sick people among us, and as Dr. Trudeau examined his patients only very rarely, some of them only when they came in the fall and when they went out in the spring, and visited them only when there was special need, his winter practice at this time was not very exacting.

The sanitarium was three years old and then contained about 30 patients. The entire management was on his shoulders and, of course, occupied a great deal of his time. He had started almost unconsciously a wonderful institution, and it was amusing to see his assumed consternation at its growth. He would half-jestingly complain bitterly of the load he had to carry, while grasping with avidity every possible chance of increasing it.

He worked some part of every day in his laboratory which consisted of his narrow office with a boot closet at the end, his barn, and the pit that he had dug in his backyard. . . .

Just at this time many cures for tuberculosis were being advanced, most of them based on the supposed germicidal action of various agents. He tested these and many other things in the hope that he could find something that would kill the organism within the body.

A French observer had stated that men who etched on glass with hydrofluoric acid seldom had tuberculosis, and it was supposed that it was breathing the fumes of this chemical that accounted for this supposed effect. This we tried and it did, indeed, kill the germ in culture. I saw that he would like to try it on a patient as well as on inoculated animals, and I suggested that I try it on myself. He was somewhat loath to let me do so, but finally consented, and thereafter I sat for two hours a day in a room breathing the fumes of hydrofluoric acid, with the result that every bit of glass in the room was etched and that the bacilli disappeared from my expectoration. The rabbits did not fare so well, and although one or two other patients tried it, no further result was obtained.

The deftness and skill which Dr. Trudeau showed in all his actions was very evident in his laboratory technique [Fig. 10]. Even though the apparatus was simple in the extreme, it was nicely adapted for its purpose and was used by a master workman. One thing in particular I should like to mention, as it never failed to arouse my astonished admiration. The thermostat was heated by a kitchen coal-oil lamp, and Dr. Trudeau regulated the temperature by turning the flame up or down and opening one or more of the doors of the wooden cases that surrounded the tin box. This was not hard to do during the day while the fires in the house were kept up, but it required skill to arrange for the whole night when the fires went out and everything was apt to freeze. Before going to bed he would look at the barometer on his table, go out-of-doors and look at the thermometer, make an observation of the heavens and as a result he would turn the flame up or down, and shut or open the various doors. In this way, he was able to keep the temperature of the thermostat within the proper limits. . . .

Medicine was not a business to Dr. Trudeau, nor was its study a fascinating response to scientific curiosity. The central, compelling force was a strictly humanitarian desire to do everything he could to cure tuberculosis, or, if not this, to alleviate the condition of the sufferer as much as possible. . . .

His was a nature that appealed instantly to everyone who met him and it was easy for him to influence even casual acquaintances. He used this power with great skill in controlling his patients, and getting assistance for his charitable work. Men and women gave him without stint their unremunerated labor, and others delighted to help him with their money. This power which he retained to the last is shown very beautifully in the account which Mr. Clayton Hamilton, in his recent book *On The Trail of Stevenson*, gives of his single interview with Dr. Trudeau. The trail had led



FIG. 10. Edward Livingston Trudeau (Reprinted from Edward Livingston Trudeau: An Autobiography. Doubleday Page & Company, Garden City, N.Y., 1916)

Mr. Hamilton to Saranac Lake in the Christmas season of 1911, where he saw Trudeau, who was then ill and sitting out on his little porch. They talked about Stevenson and of Dr. Trudeau's own work. Among other reminiscences, Dr. Trudeau recounted, as he delighted in doing, Stevenson's remark on one occasion in which he had been decoyed into the laboratory. Stevenson, after looking for awhile at the cultures and specimens, said about as follows: "Trudeau, we both are bearing lanterns, but I must say yours smells to me most confoundedly of coal-oil." In relation to this story, Mr. Hamilton writes: "The doctor told me this with humor; but it did not seem to me so funny when I thought about it afterward. At present I remember an eager, active-minded man sitting anchored in a lounging chair and muffled among fur; talking with that tense voice of the achieving dreamer; at home in life, though exiled from its laughing and delightful commonplaces; cheerful and alert, though slowly dying; young, clear-eyed, and still enthusiastic, although already ancient in endurance; lying invalided while his City of the Sick grows yearly to greater prominence among the pines; fighting with an easy smile the death that has so long besieged him, to the end that others after him, afflicted similarly, may not die. And the best of our tricky and trivial achievements in setting words together dwindle in my mind in indistinction besides the labors and the spirit of this man.

THE FIFTH ANNUAL MEETING

The fifth annual meeting of the Association was held in Washington in the hall of the new Grand Army Building on September 18, 19, and 20, 1888. There were 53 members in attendance and for the second, and final, time Alfred L. Loomis occupied the presidential chair during the various sessions.

In his Presidential Address, Loomis said that the Association had not only made a scientific record for itself in its early years, but that it had stimulated the profession in this country to harmonious work in an important field and had given such prominence to climatology and hydrology in this country that our springs and health resorts were being placed on a more intelligent and scientific basis. As a result, English and French physicians were already sending their phthisical and rheumatic patients to those American resorts receiving the sanction of this Association. The subject of his second Presidential Address was the climate and environment best suited to old age in health and disease—it was, in fact, one of the early papers on the health problems of the aging population. He began by stating that there was nothing perhaps more prejudicial upon the aged than cold, quoting Farr in the Third Annual Report of the Registrar General of England that "the rate of mortality rises in the aged as the mean temperature falls." After thoroughly considering the subject, he reached several conclusions: 1) Healthy old age thrives best and is most vigorous when it can be passed in moderately warm climates. 2) The localities best suited to the development of healthy old age are those that enable an out-of-door life with surroundings and associations conducive to mental and physical activity free from excitement. 3) The locality suited to healthful development of age must furnish

an abundance and variety of well cooked food; the comforts and, if possible, the luxuries of life must also be within easy reach, for if there is any one period of life more than another in which comforts and luxuries are essential to healthfulness it is that of old age. He pointed out that it is never safe for an aged person with chronic bronchial catarrh to pass quickly from a very dry to a very moist climate; he found that from December to April, Nassau, the Bermudas, and Monterey are best suited for this type of individual, while during July and August such persons do well at Newport or Cape May. For the elderly patient with phthisis, the best locality in winter months is on the Gulf Coast of Florida; during the early spring, Thomasville, Georgia, and Aiken, South Carolina are places where they could spend two or three months with benefit on their way north; in summer, the seacoast of Cape Cod and Narragansett furnishes atmospheric and hygienic conditions especially adapted to older persons with this disease. It is clear that Loomis had a very affluent practice and that the majority of the elderly could not possibly follow such well-intended advice. He admonished physicians who had passed 60 years, especially if their previous history indicated a strong liability to pulmonary disease, to remember that a doctor above ground can accomplish more in the 9 months of the year than he can below in 12. Referring to patients with arthritis and gout, he stated that he had long since abandoned the local measures usually resorted to in their management and had relied almost exclusively upon diet and climate.

ALFRED L. LOOMIS

Although Loomis's presidency of the ACA ended in 1889, he remained a prominent figure in the first decade of the Climatological's existence. As an organizer of the Association of American Physicians (AAP) and president of that organization in 1892, he was an eminent physician among eminent physicians. Loomis stated in his Presidential Address to the AAP that there was now full appreciation that the theory and practice of medicine had given place to the science and art of medicine and that the nature of this change could not be more tersely or aptly described than in the words of Ruskin: "The work of science is to substitute facts for appearances and the demonstrations for impressions." This he interpreted to mean that all our errors in science are subjective: "The day of speculative medicine has passed," he said; "henceforth we must know, not suppose." In testing medical work by this standard, it was all too evident to him that we are called upon to undo, as well as to do. To this end there must be a clear consciousness of the boundary line between speculation and demonstration. The tripod support of science is observation, theory, demonstration. The first gathers facts, the second consid-

ers their relations, and the third tests all. He who offers observation alone asks your judgment as to their accuracy and your help in determining their relations.

“We have started afresh at the very rudiments of our science, and in the kindergartens of the laboratory we are seeking to know the laws of health and the causes of disease; to have all theories based upon clearly determined facts, and use such theories only as guides to the discovery of the missing links in the chain of investigations. . . . The final test of a scientific mind is its power of deciding, after any given demonstration, between legitimate conclusions and unfounded inferences. When the medical history of the last half of the 19th century shall be written it will be largely that of the laboratory. Among the names which the 20th century must honor, none will stand higher than those who, having devoted themselves to establishing objective facts of medicine, were not beguiled by their work to elevate the experimental above the practical. Let us also, who are brought into such intimate relations with the practical, see to it that we are equally wise and self-controlled.”

A more personal side of Alfred Loomis is remembered by Guy Hinsdale, a revered member of the American Clinical and Climatological Association, and its secretary for many years:

My introduction to climatology was through a very interesting experience. When a boy I had been fascinated by a good book on camp life in the Adirondacks, written by the Reverend W. H. H. Murray, and eventually I had an opportunity to explore this region. It happened that I met a friend in Burlington, Vermont, Dr. John B. Roberts, who later became a distinguished teacher of surgery in Philadelphia and we planned a short walking tour through the mountains, crossing the lake to Port Kent. Provided with small knapsacks, we started on the long tramp, visiting the Ausable Chasm, Ausable Forks, and Lake Placid which we reached through the Wilmington Notch and where we spent our second night. On the evening of the third day, we reached Martin's Hotel on the lower Saranac Lake, having made the trip of over 55 miles on foot all the way from Lake Champlain in three days. Neither of us knew that about a mile away, in a camp on a hillside, there was a man who was later to shed luster on this Association and the medical profession, Dr. Edward L. Trudeau. Trudeau had started a small sanitarium, which he called the Adirondack Cottage Sanitarium, about a year previously in a little building which is still standing. He had a few patients who were referred him by Dr. Alfred L. Loomis of New York, but we had no time to deviate from our definite plan which was to reach Paul Smith's. So we left Martin's at 6 o'clock on the following morning with canoe and guide and passing through lower Saranac Lake, negotiated the treacherous Round Lake and upper Saranac Lake to the Prospect House where another guide met us and took us through the Nine Carries, Lower St. Regis Lake, Spitfire, and Upper St. Regis Lake to Paul Smith's.

On the following day, we called on Dr. and Mrs. Loomis in their attractive camp. He was then the most distinguished and successful teacher of medicine in America and although we did not know it he had just been elected to his second term as president of the American Climatological Association. He told us about Trudeau and his courageous battle for health in the Adirondacks and urged us strongly to make his acquaintance, as Trudeau was in the habit of coming to Paul Smith's to attend many patients whom Dr. Loomis brought to the mountains. We found Dr. and Mrs. Loomis most hospitable and their kindness to two young Philadelphians made a great impression. Dr. Loomis was a very large man so it seemed to us and he aroused in us

a great desire to know more of life in the woods. . . . Dr. Loomis was born in 1833 and this Association should recognize the centenary of his birth. I trust my account of recollections by him may be considered as a tribute on this anniversary. He graduated from Union College in 1851 and studied in New York City at the College of Physicians and Surgeons where he graduated in 1852. He gave his attention to diseases of the lungs at a time when auscultation and percussion were acquiring great scientific importance in medical practice and in the treatment of such diseases. Loomis became a great specialist. In 1859 he was appointed visiting physician to Bellevue Hospital and in 1862 was lecturer on physical diagnosis at the College of Physicians and Surgeons. Four years later, he was appointed professor of the theory and practice of medicine at the University of the City of New York where he remained until his death.

The minutes of the Climatological meeting in 1895 reported the death of Alfred Loomis on January 23 of that year:

In his professional life Dr. Loomis was preeminently an active, energetic, sagacious physician. In all his relations to medicine and medical progress he was conservatively but uniformly progressive; never assuming an advanced position until fully, or even superfluously, convinced of its accuracy, he was unfaltering in its defense. . . .

Dr. Loomis was one of the faithful band who originated this Association and we all well know how faithfully he worked for its advancement and success. He was its first president and was again its president during the first Congress of American Physicians and Surgeons in Washington, assembled, and, as our delegate, was elected the president of the third Congress. At one time efforts to merge the American Climatological Association into another national organization threatened to destroy it. Dr. Loomis arose in his might and courage and averted the danger, if such existed. . . .

In expressing our sense of personal, as well as united, loss in the death of Dr. Loomis, we realize that we can do him no greater honor than to present this record of his work for a perpetual stimulus to members of this Association.

In his Presidential Address before the Association of American Physicians in 1895, William Osler remarked on the death of Alfred Loomis:

Of Alfred Lee Loomis I need not say much to this audience before which, as well as before a much larger, he played a strong role. Energy and determination, so clearly stamped on his features, led him early into the path of success and each decade added reputation and prosperity. Threescore and four years found him one of the most prominent figures in the profession of this country; a successful writer, a much-sought consultant, a busy man of affairs. Then the end, and happy for him, perhaps, while the harness was still on, and while the vigor of mind and body was unimpaired. In this Society, in the Congress of our united bodies, Dr. Loomis proved a trusty counsellor, an earnest worker, and a zealous supporter of the best interest of the profession. In his faithful attention to those duties which lie outside the daily routine of our lives, duties which we are only too apt with advancing years and with assured success to neglect, he was a notable example to us all.

OTHER PAPERS AT THE FIFTH MEETING

Most of the papers on the program were concerned with climate and its effect on tuberculosis, or descriptions of the climate and facilities for

patients with that disease in a particular locality. There were, however, in addition, other papers of particular interest, including one by Roland G. Curtin on "Climate as an Etiological Factor in Graves' Disease," and "The Effect of Climate on Bright's Disease" by J. C. Wilson of Philadelphia. E. L. Trudeau presented the results of a repetition of his experimental studies in rabbits reported at the previous year's meeting. By comparing the two experiments, he demonstrated clearly that the amount of "virus" entering the economy at one time is an important factor in determining infection, and the influence of a favorable environment was emphasized, not only by the entire freedom from disease presented by two of his rabbits, but by a careful study of the arrested lesion of their mates.

Trudeau also stated that although all attempts at the direct destruction of the tubercle bacillus in living beings by germicides had so far proved fruitless, the records of autopsies made by Vibret, Councilman, and others, as well as the evidence offered by the present research, furnished proof that the tissues themselves could, under certain conditions, either limit the destructive action of this microbe or even entirely rid themselves of its presence. The paper was discussed by Dr. W. T. Councilman of Harvard, who had been invited as a special guest to this meeting.

The only paper based on true laboratory experimental work was that of Frank Donaldson, Jr., who worked in the laboratory of Professor Newell Martin at Johns Hopkins. He further elucidated his studies of circulatory changes at high altitudes, which he had presented at the previous year's annual meeting. He concluded that all disturbances of the circulation at high altitudes were related to the lessening of the normal pressure with which the lungs ordinarily press against the heart and great vessels.

It was clear at this fifth meeting that the members of the Association were interested in diseases other than tuberculosis. The program contained a lively symposium, consisting of a paper by F. H. Bosworth of New York on "The Relation of the Nasal and Neurotic Factors in the Etiology of Asthma," followed by another paper on the same subject by E. L. Shurly of Detroit. After these two presentations, remarks were made by W. H. Daly of Pittsburgh, Pennsylvania, who had recently read an important—and widely applauded—paper on this subject before the Congress of the Laryngological Association in New York. The final discussion was by Andrew H. Smith of New York. There were also reports of two epidemics of cerebrospinal meningitis in New York State: one by Leroy J. Brooks of Norwich, New York, and the other by Willis E. Ford of Utica.

Shurly's work was done in the physiological laboratory of the Detroit College of Medicine, where he demonstrated that stimulation of the vagus

nerve in dogs resulted in marked contractions of the trachea, bronchial tubes and diaphragm. A second series of experiments consisted of exposing the sphenopalatine ganglia in the dog. Stimulation produced contraction of the nasal, palatine, and upper constrictor muscles. In short, the dog sneezed, but no contraction of bronchioles took place. Thus, experimental medicine was beginning to play a role in the programs of the Climatological. The discussions in this symposium revealed the field to be in a very primitive state, and the true basis of hay fever and asthma not yet delineated. Progress would come in the early 1900s, when Meltzer would show that hypersensitivity reactions resulted in severe bronchial constriction.

THE SIXTH ANNUAL MEETING

The sixth annual meeting of the American Climatological Association was held in Boston on June 25, 26, and 27, 1889. Thirty-three members were present, with Dr. Vincent Y. Bowditch in the chair.

Vincent Yardley Bowditch¹¹ spent his entire career in the fight to do away with tuberculosis. He was one of the founders of the National Tuberculosis Association. As its fourth president, he guided the American Sanatorium Association from infancy to robust adolescence. He was also one of the founders of the Massachusetts Tuberculosis League and its first president. In 1891 he opened the doors of the Sharon Sanatorium and controlled its fortunes as long as he lived. Largely because of the excellent results at Sharon, the State of Massachusetts established at Rutland the first state sanitarium in the country, and in the capacity of examining physician, Bowditch was for years a guiding spirit of this institution. A delightful biography of his father, Henry I. Bowditch, in two volumes established him as a writer of real ability.

Bowditch's Presidential Address was entitled "Comparative Results in Ninety Cases of Pleurisy, with Special Reference to the Development of Phthisis Pulmonalis." One of the highlights of the meeting was the presentation of a requested paper by Henry I. Bowditch entitled "Open-Air Travel as a Cure and Preventive of Consumption."¹² Dr. Bowditch was unanimously elected as an honorary member of the Association at this meeting. There were the usual group of papers on various aspects of tuberculosis but, in addition, there was an important presentation on the mortality of acute lobar pneumonia, based on a study of all the cases of this disease treated at the Massachusetts General Hospital from the first case in 1822 up to the present day. This paper was given by C. W. Townsend and A. Coolidge, Jr. There were again several papers relating to asthma, including one on its causation and treatment by Beverley Robinson of New York and one on its climatic treatment by Frederick I. Knight of Boston. Alfred L. Loomis gave an interesting talk on rest and

exercise in heart disease. At this meeting, scientific sessions were held in the afternoons as well as in the mornings.

THE SEVENTH ANNUAL MEETING

The seventh annual meeting was held in Denver, Colorado on September 2-4, 1890, under the presidency of Charles Denison.

On Friday, a complimentary excursion was provided by the Union Pacific Railway—to Idaho Springs, with the return through Clear Creek Canyon. On Saturday the group started on a similar excursion, given by the Denver and Rio Grande Railway, around the Circle: they traveled through Pueblo and Veta Pass; spent the first night in Durango; continued via the canyon of the River of Lost Souls to Ouray for the second night; and returned via the Black Canyon of the Gunnison, over Marshall Pass, through the Grand Canyon of the Arkansas and back to Colorado Springs.

The Colorado Midland Railway also placed at the disposal of the members a complimentary excursion, embracing two days at the end of the meeting, to Glenwood Springs via Leadville and back; members who were able to stay found this trip enjoyable.

Charles Denison, in his welcoming address, praised the magnificent climate of Colorado. He indicated that one of the chief reasons the Association met in Colorado was to enable its eastern members to encounter the profession of the far West, hear their views, and join in the discussion of their western experiences. The sessions were lengthened by a day and representative men from New Mexico, Arizona, Utah, and Colorado were present to discuss subjects of interest to the easterners. Even in those days there were scheduling conflicts, as the meeting was held shortly after the International Medical Congress in Berlin and such staunch Climatological members as Pepper and Kretschmer were unable to attend.

Denison, in his presidential address, talked about abnormal intrathoracic air pressures and their treatment. He introduced his own spirometer for measuring vital capacity and compared it with others then in use, showing that his presented little or no resistance to the expired breath and thus gave better measurements than the spirometer of Marsh or of Hutchinson. He gave a complete review of respiratory physiology as it was understood at that time, pointing out that the source of governing power of all this respiratory activity, the so-called respiratory center, lay in the medulla, an association proved in 1879 by Austin Flint, Jr. Denison noted that the chief stimulus for the respiratory center is an oxygen deficiency. If this deficiency is present, the demand for a renewed supply is sent out by the respiratory center to the inspiratory nerves and the resulting effort at inspiration seems to be without reference to carbon

dioxide. On the other hand, if there is an excess of carbon dioxide in the blood, the stimulus is sent out from the respiratory center especially to the expiratory nerves. In order to demonstrate the influence of respiratory activity upon the heart's action, Denison made sphygmographic tracings of the pulse wave under varying conditions of breathing and demonstrated that the heart always works in harmony with intrathoracic air pressure. In this address, which occupied a full 46 pages in the *Transactions*, he went on to discuss abnormal states of intrathoracic pressure including 1) fibroid process; 2) atelectasis; 3) asthma; 4) emphysema; 5) bronchiectasis; 6) pulmonary hemorrhage; 7) empyema and thoracentesis; 8) the drainage of pulmonary cavities; and last but not least, 9) membranous croup or any stenosis of the larynx. He found time to treat only the first four in this paper and promised a continuation at a later date. Denison also presented an interesting definition of bronchial asthma: "It is a neurosis producing a paroxysmal dyspnea, due to irritation '*in loco*,' or of the pneumogastric nerve, causing contraction of the circular muscular structure of the bronchial tubes, thus limiting inspiration chiefly, but also expiration; and eventuating (if prolonged) in structural change in either one of or both the vesicular or bronchial portions of the lung." He described a device, which he called the "Portable Lung Compressor" and had constructed for the self-treatment of emphysema. Its purpose was the rhythmical and forcible compression of the chest in consonance with respiration.

In the next article, D. M. Cammann of New York discussed the pneumatic treatment of disease, and presented illustrative cases. He pointed out that the use of rarefied and compressed air in the treatment of disease was nothing new. In 1664, Henshaw, an English physician, proposed the technique of varying the pressure of the atmosphere surrounding the patient. Patients were placed in chambers in which the air was rarefied or compressed. It was generally considered that the methods of inspiration of condensed air and expiration into rarefied air were the most valuable. By inspiratory differentiation was meant the act of breathing the atmospheric air while that surrounding the body was rarefied; and by expiratory differentiation was meant the breathing of atmospheric air while that in the cabinet was compressed. In breathing air compressed relatively to that surrounding the body, the chest expands and takes in more air than in a normal respiration. "But if we expire into the compressed air, the residual air remaining at the end of expiration is greater than after a normal expiration unless more than the usual expiratory force is used. The reverse is the case if we breathe rarefied air; the inspiration will not be so deep and less residual air will remain after expiration than normal." Cammann presented cases showing the use of this technique in dyspepsia, chronic bronchitis, phthisis, old pleuritic adhesions, asthma and other conditions.

In the next paper, J. H. Kellogg of Battle Creek, Michigan, discussed a "Graphic Method of Recording Diseased Conditions of the Lungs, and a New Form of Pneumograph." He pointed out that the introduction of the graphic method of studying physiological conditions had ushered in a new era and that a new science in physiology had been created. For several years he had been trying to apply these methods to the study of man and had made thousands of observations with the sphygmograph, the cardiograph and the pneumograph, and other instruments that utilized the recording tambour and cylinder. He described an unusual instrument with which he made tracings of the body under various conditions for the purpose of studying the relation of the contour of the body to internal conditions, and he had made a study of the changes that occur in the form of the trunk during respiratory movements. All of these studies were done on presumably normal individuals. He also described a new form of pneumograph, which enabled one to study the character of the entire respiratory movement. It consisted of two chambers separated by a diaphragm of thin rubber. One of these chambers was connected with a recording tambour, which wrote upon a sheet of smoked paper carried by a revolving cylinder such as used with the ordinary pneumograph. The other chamber was connected with a breathing mask which in use was placed over the mouth and nose. This chamber was provided with a second opening, the size of which was controlled by a shutter that could be adjusted at will. The patient under examination breathed into this chamber, which might be called the breathing chamber of the instrument. With the chamber completely closed, the breath would simply pass from the lungs into the chamber and back again, there being no change of air; but with the shutter open, air was drawn into the chamber with each inhalation and expelled at each exhalation. The resistance that the air met in passing through the shuttered opening gave rise to changes in pressure within the breathing chamber, the pressure being diminished during inspiration and increased during expiration. The amount of this change in pressure depended upon the size of the opening and could be exactly measured by connecting the breathing tube with a water column. The average pressure that he observed was equivalent to a column of water one-half inch in height. This was certainly an amount too small to modify seriously the form of the respiratory movements. He felt that this instrument afforded an excellent method of detecting small degrees of emphysema as well as various forms of weakness in the muscular part of the respiration. Kellogg also described a simple apparatus for the determination of the quantity of CO_2 in atmospheric air, with which the amount of CO_2 present in either the atmosphere or in the expired breath of the patient could be determined.

In discussing Dr. Kellogg's paper, V. Y. Bowditch of Boston said that he considered the apparatus introduced by Dr. Williams very effective in

the treatment of pulmonary diseases, feeling that the greater part of its beneficial influence came from the gymnastic effect upon the chest.

The *Transactions* for this sixth meeting also contained a memorial of Dr. Alexander Yelverton Peyton Garnett, who had died during the summer of 1888. Garnett was one of the most distinguished and colorful members of the Climatological (See p. 14). Born in Virginia on September 19, 1820, he joined the Navy after graduating from the University of Pennsylvania School of Medicine at the age of 19. Garnett was elected president of the American Medical Association, presiding at its meeting in 1886. His address there on medical education excited a great deal of notice and approval at the time as he brought into bold relief the evils of medical education in this country.

THE EIGHTH ANNUAL MEETING

The eighth annual meeting of the American Climatological was held at Washington, D.C. from September 22 through 24, 1891, in connection with the Congress of American Physicians and Surgeons. Fifty members were present. In his Presidential Address, Dr. Frederick I. Knight (see p. 10) of Boston pointed out that the Association had clearly justified its creation. Beginning seven years ago with a program of six papers "the material offered us has gradually increased from year to year, until today a program of 38 papers is presented of a quality which will challenge comparison with any other organizations." He recalled that when the Association was founded and the name "Climatological" adopted, it was feared by some that as the number of members who were in a position to offer anything original pertaining to climatology was so limited, the organization might have a struggling existence. It was, however, provided from the start that diseases of the respiratory and circulatory organs should be included in the province of the Association, and soon hydrology was added. What a vast field these boundaries gave the ACA can be seen from the papers on the program. Nevertheless, climatology did still engage a good deal of their attention, and the effort to hold the annual program at some noted health resort was usually carried out.

Of particular interest at this meeting was the presentation of the clinical story of the influenza epidemics which occurred in 1889, 1890, and 1891 in Philadelphia, in Chicago, St. Louis, New York, and Savannah. The meeting featured very extensive discussion of these various reports. Much of the discussion centered around the contagion of the disease and primitive studies of its epidemiology. In a paper on the value of Koch's remedy, Frank Fremont-Smith pointed out that those cases in which the dose is adjusted so that fever is not produced appear to show definite and continued improvement in general physical condition, in character of cough, and amount of expectoration.

THE NINTH ANNUAL MEETING

The ninth annual meeting was held at Richfield Springs, New York, on June 23, 24, and 25, 1892 (Fig. 11). The Council recommended that the papers of the Association be given to the publishing house of J. B. Lippincott Company of Philadelphia for *The Climatologist*, which Lippincott anticipated publishing, in return for which the usual number of bound copies would be required. During the meeting, a delightful dinner was held at Thayer's Restaurant on Otsego Lake and Dr. Willis E. Ford,¹³ who was president that year, and his wife gave a reception in the Springs House the evening of the 23rd, at which the members and their wives enjoyed meeting the elite of Utica and Richfield Springs.

The first paper on the program was by Abraham Jacobi of New York, who discussed guaiacol in the treatment of pulmonary tuberculosis. Guaiacol, an ethereal product of beechwood, is soluble in 200 parts of water and was first recommended for its efficacy in tuberculosis processes in 1880, by Professor Max Schuller of Berlin. The next paper, by Vincent Y. Bowditch, may have been the first on the effect of change of posture upon heart murmurs. Bowditch stated that he had been unable to find any references to this subject in medical books and thought it worthwhile to report his experiences. He had been struck chiefly by the following facts: that in most cases, systolic murmurs heard at the base of the heart are intensified when the patient is lying down (where any difference is noticed at all by change of positions); however, he found the reverse to be true at times as well. He later found a paper in the *New York Medical Record* of June 11, by Dr. O. B. Campbell of Ovid, Michigan, in which the same observations were made. Dr. Loomis had also reputedly discussed this subject at the Congress of American Physicians and Surgeons, but his remarks were apparently not printed.

Alfred L. Loomis discussed the underlying conditions that are usually present when sudden and fatal heart failure occurs. These fell under three headings: 1) those in which the heart had for a long time been called upon to perform an abnormal amount of work, as in valvular or arterial disease; 2) those in which obstructive changes in the coronary vessels had markedly diminished the nutritive supply of the cardiac muscle; and 3) those in which toxic influences acted directly upon the nutrition of the cardiac muscle.

The bizarre types of treatment given to patients with tuberculosis in this era were well illustrated by E. Fletcher Ingals's discussion of the Shurly-Gibbes treatment of tuberculosis. The iodine and the gold and sodium bichloride treatment of tuberculosis originated with Drs. E. L. Shurly of Detroit and Heneage Gibbes of Ann Arbor when in the fall of 1890 they reported the outcome of their numerous experiments on animals. Owing to the furor created by the announcement that Koch had



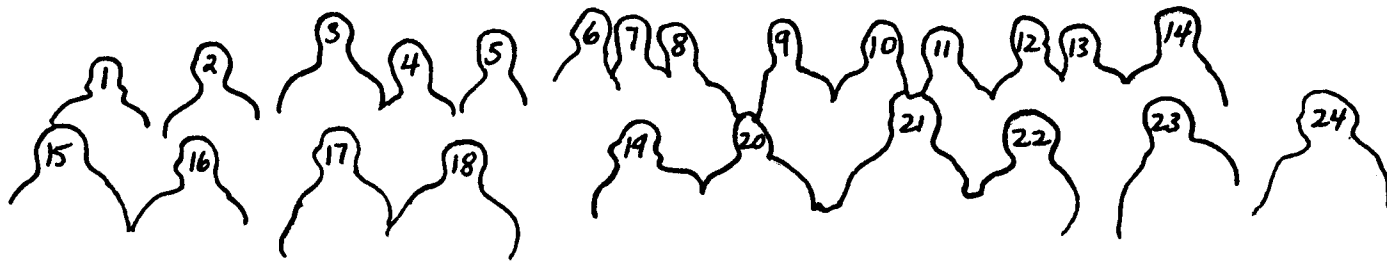


FIG. 11. Members of the American Climatological Association, Richfield Springs, N.Y., June 1892 (Courtesy, The Francis A. Countway Library, Boston, Mass.) 1- C.C. Ranson, 2- Thomas J. Darlington, 3- H.F. Williams, 4- H.L. Elsner, 5- C.E. Quimby, 6- E.O. Otis, 7- H.L. Taylor, 8- G.R. Butler, 9- I.H. Platt, 10- Harrison Allen, 11- W.M. Gibson, 12- E. Evans, 13- H.G. Jones, 14- W.P. Dodge, 15- J.B. Walker (Secretary), 16- F.I. Knight, 17- V.Y. Bowditch, 18- A.L. Loomis, 19- Charles Denison, 20- W.E. Ford (President), 21- R.G. Curtin, 22- Beverley Robinson, 23- S.W. Langmaid, 24- W.G. Wheeler

discovered a remedy for tuberculosis, some enterprising newspaper men who had heard of Shurly's experiments succeeded in obtaining from the report of the medical society of Detroit and from the Harper Hospital certain facts with reference to his researches; these facts, when amplified and illuminated by the brilliant imaginations of the reporters, made many columns in the daily press and were sent out to all parts of the country. The craze over Koch's tuberculin kept alive the interest in Shurly's treatment and caused numerous physicians in various parts of the country to give it premature trials. Ingals had treated in his private practice over 200 cases with this regime. He was so impressed with his results in early or moderate tuberculosis that he made the following statement: "But for myself I would feel that I had not done my patient justice if I had not given him the benefit of a trial of this treatment, providing the disease of the lung had not extended below the third rib when he first came under my observation." Drs. Allen and Taylor, who discussed this paper, also reported good results.

THE TENTH ANNUAL MEETING

The Tenth Annual Meeting of the American Climatological Association was held in the hall of the College of Physicians of Philadelphia from May 25 to 27, 1893. A committee was appointed to prepare short biographical sketches of the services of deceased members with the object of publishing them in the *Transactions*. The members were entertained at luncheon on Friday at the Art Club by the president, Dr. Curtin; a dinner was given the fellows of the Association by the Philadelphia members at the Bellevue Hotel on Friday evening; and at the invitation of Provost Pepper and Professor J. S. Billings, a luncheon was enjoyed in the library building of the University, after which the Bureau of Hygiene was thrown open for inspection under the guidance of Dr. A. C. Abbott, chief demonstrator. A special event was a request by Dr. Quimby to discuss the availability of ozone which, during that period, was employed as a therapeutic agent, "our most powerful antiseptic and stimulant to animal life heretofore obtained and retained with such difficulty." Although the virtues of local application were expansively described by Dr. Quimby, anecdotal evidence can be deceptive, since this form of treatment soon disappeared from the medical armamentarium.

THE FIRST DECADE ENDS

Since this was the Association's final meeting of the first decade, Roland G. Curtin¹⁴ in his Presidential Address gave a brief description of the society's accomplishments at the first nine meetings. Curtin pointed out that at the founding of the Association some of the members

had doubts as to its ultimate success but were proved wrong. He believed that the *Transactions* contained reports with much of value and was as progressive as any special society's publication in terms of new and important material. Climates were studied along with their fitness for special diseases so that now one could direct patients with more certainty to places that would be not only beneficial but also comfortable and attractive. He gave a brief summary of the papers published, showing how numerous and varied were the subjects considered at the first ten meetings: "Pulmonary Phthisis and Diseases of the Air Passages," 60 papers; "Pneumonia and Pleurisy," 6; "Asthma," 4; "Diseases of the Heart," 15; "Epidemic Diseases," 18; "Mineral Springs and Baths," 12; "Experiments as to the Effects of Air Pressure on Diseases of the Heart and Lungs," 9; "Studies of Special Climates," 62. Many papers on special subjects could not be easily categorized; including these brought the number up to about 220. It should be remembered that several monographs had been read that were not handed to the secretary or were omitted from the *Transactions* because they had been published elsewhere.

After the first and second annual meetings, the Association had to pay several hundred dollars for the publication of the *Transactions*. In the past two years, however, offers were received from more than one publisher to print them gratuitously after the publisher had made use of them in prominent medical journals. Curtin made several important suggestions. The first was that since valuable discussions of papers had been lost to outside members of the profession because they were either not reported or were imperfectly reported, a competent stenographer should be permanently employed. He also recommended that the Association have a permanent committee on health resorts to collect important data and report to the society each year. He suggested that the organization should be ready to raise its united voice in all important national questions, and that they might assist in guiding Congress to establish a National Leper Colony, which was greatly needed at that time. He also indicated that there should be a plan to raise the standard of membership and that a limit should be placed on the total membership.

The excellent selection of papers at this meeting covered such broad and varied subjects as angina pectoris following injuries to the precordium, seasonal influences in erysipelas, considerations concerning cholera with a discussion of the 1892 epidemic in New York, cardiac dyspnea, and quinsy and its treatment by early incision. Now that the proceedings were being recorded, the discussions following presentation of the papers increased in volume and interest.