



Ludwig Heikonen

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LUDVIG HEKTOEN

A BIOGRAPHY AND AN APPRECIATION

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On July 2, 1938, Dr. Ludvig Hektoen celebrates his seventy-fifth birthday. His career as a medical scientist has won him the admiration, the love and the respect of every one who knows him. It would be easy to glorify him, to hail him with excitement and frenzy, as what Paul DeKruif calls a "death fighter"; but with Dr. Ludvig Hektoen such diction would be wholly out of character. He is a calm man, never given to overstatement. Nevertheless he emanates inspiration. The young men whom he has encouraged and helped and stimulated are many in number and remarkable as to their accomplishments.

EARLY YEARS

The records of the Norwegian Evangelical Lutheran Church in Coon Prairie, Vernon Co., Wis., testify that Ludvig, the son of P. Hektoen and wife Olava (née Thorsgaard), was born July 2, 1863, and baptized July 19 of the same year. In these few lines Halvorsen, pastor of the said church, recorded a very important fact for the development of American medicine.

The Thorsgaard family arrived in Quebec on Aug. 6, 1854. After remaining on the boat for three days, the family, in the company of other immigrants, left Quebec on August 10 by boat, traveling through canals and the lakes and by railroad to Stoughton, Wis. By wagon they proceeded to West Koshkonong, where they remained about a week. Then they resumed their journey, passing through Madison, Wis., and that evening reached the town of Viroqua. The following day they proceeded to their destination, a place now called Westby, Wis.

In the course of the travels of this group of immigrants from Quebec to Westby, fourteen deaths occurred, all except one from what was called cholera. This story of the life of the American pioneers has of course been repeated in many other instances, but it is important to realize the nature of the stock from which Ludvig Hektoen was derived. It was good, vigorous Norwegian stock.

In the pioneer settlement of Westby, composed almost wholly of Norwegian immigrant farmers and their families, Ludvig Hektoen spent his childhood. He was the only child until his sixth year, when a

brother was born. Later other children were born. Hektoen's father was a Lutheran parochial school teacher. The boy began attending school early, but the terms seldom lasted longer than two or three months. Later, he attended the common or district school. As all the children were Norwegian, English was not spoken except during school hours, and all efforts by the teachers to make the children speak English were without effect.

In his spare time, Ludvig did chores about the place and helped with the farm work. He learned, of course, to ride a horse, but he was not particularly skilful at childish games or hunting, or in the use of tools. He had no special preferences for any of the branches taught in school. He did not come early into contact with any one interested or especially trained in botany or in any of the other sciences concerned with nature. Moreover, there were no books in the home devoted to the sciences. The collection was the usual one of that time, consisting mainly of Norwegian story books and family magazines.

When Ludvig was 13 years old, he went for nine months to Monona Academy in Madison, Wis., a school now extinct. The work of this academy was similar to that given in the higher classes of the district school. Most of the pupils lived in the buildings of the academy. Ludvig earned a little money chopping wood for one of the school teachers.

In 1877, when he was 14 years old, he went to Luther College in Decorah, Iowa. There he spent six academic years and graduated in 1883 with the degree of Bachelor of Arts. The course in the Decorah college included mostly the studies belonging to a classical type of education, with much emphasis on Latin and Greek. There were no courses in biology, chemistry or physics. Typical of that education which endeavors to reinculcate in the young the tradition of the fatherland and the sentiment and belief of the foreign parent, much attention was paid to teaching the Norwegian language. While there was special training in English, about the same amount of emphasis was placed on talking and writing Norwegian. However, a good reading knowledge of German was acquired, and the mathematical training included algebra and geometry. There were no elective courses. The curriculum was prescribed. The aptitudes of the students for special subjects did not concern their teachers. However, the library facilities were good, and Hektoen read extensively in the classical English and Scandinavian literatures, with a predilection for novels. That catholicity of literary taste has continued with him to the present.

Nearly all the students at Luther College, which was not coeducational, lived in the college buildings. The conditions were far from those required by modern hygienic standards. There was, of course, no regular instruction in personal or physical hygiene. The food was simple, monotonous and seldom well prepared. Football, track athletics

and baseball were not included in the curriculum. The only opportunity for exercise or sport included walking and skating. The school did have a debating society. While Ludvig Hektoen did not exhibit extraordinary facility in vocal demonstration, his mental powers induced him to take a modest part in the debating society and in an occasional program of literary character. When commencement came, he was one of three or four in the graduating class selected to speak, perhaps because his scholastic attainments were above the average, although the records do not indicate excellence in any particular branch.

From what has been said thus far, it is apparent that neither by heredity nor by environment was Ludvig Hektoen especially destined to the study of medicine. How then did he happen to choose a career in a field in which he has attained such enviable distinction? The plan to study medicine began to form in his mind some two or three years previous to his graduation. He does not recall any special occasion which served to turn his attention to the possibility of studying medicine, unless it was a desire to escape from the necessity of studying theology. Most of the students in Luther College at that time were more or less predestined for the ministry. Nevertheless, two members of the class in which he graduated, which included sixteen, subsequently studied medicine.

In 1881 a young, attractive and well educated physician, Dr. Johan K. Schreiner, came from Norway to take up practice in Westby, Wis. Young Hektoen was much in his company during the vacation period. Perhaps this example and the encouragement from Dr. Schreiner were the determining factors in his choice of medicine as a career. The keen interest shown by Dr. Schreiner in daily work with his patients and his influence on those with whom he came in contact did much to make the career of the physician irresistibly attractive. Therefore, in 1883-1884 Hektoen took premedical courses in the University of Wisconsin, including chemistry, biology and histology. For several months the work was strange. Apparently he was not attracted especially to any particular field or by any individual teacher. Among his instructors at the University of Wisconsin were Birge, Daniels, Trelease, Powers and Van Hise.

When these courses were concluded, he decided to take the medical course at the College of Physicians and Surgeons in Chicago. His main reason for selecting this college, which was then comparatively new, was the membership in the faculty of two or three physicians from Wisconsin who were favorably known in the state. He was, however, without sufficient funds to pay for his course in medicine. He therefore obtained the position of attendant at the Northern Hospital for the Insane in Oshkosh, Wis. After a short time, he was placed in charge of the drugstore of the hospital, and he remained there until the fall of 1885.

Characteristic of Ludvig Hektoen is the fact that his job as druggist in this hospital was important not only as a means of raising funds but as an opportunity for extending his knowledge. While in this position he followed the medical work of the assisting physicians, copied notes on the condition of the patients into the record books, did some desultory reading of medical books and journals and took a rather active part in the necropsies which were performed on the patients who died in the hospital. In those days comparatively few necropsies were made, and apparently little pleasure was derived by those who made them from their performance. Frequently the physicians were glad to entrust this phase of medical work to Ludvig Hektoen; he still has available records of the necropsies which he made at that time. The material from the bodies was not studied further. Necropsy meant merely noting and recording roughly the gross appearances. There was no attempt to carry out any kind of research in the hospital. In fact, rather expensive laboratory equipment for the study of neuropathology, which had been installed and used to some extent under a previous superintendent, Dr. Walter Kempster, was allowed to disintegrate from misuse and neglect.

Then Hektoen took up the regular medical course and graduated in the spring of 1887. Now his aptitude for medicine was apparent. Practically all of the work consisted of lectures with quizzes, and the final marks were based on the final examination papers. His grades were so high that he was elected valedictorian of his class. Prof. Nicholas Senn gave the doctorate address, and the degrees were conferred by the president of the college, Prof. A. Reeves Jackson.

In the summer of 1887, immediately following his graduation, he was apothecary in the Illinois Eastern Hospital for the Insane, in Kankakee, then under the superintendentship of Richard Dewey.

During the winter of 1886-1887 Hektoen spent much of his time preparing intensively for the annual competitive examination which was given each spring for the selection of interns for the Cook County Hospital in Chicago. This was wholly a written examination which covered the main medical branches. Dr. Hektoen points out that success depended most on memorizing the contents of current textbooks and on being able to write rapidly and clearly. He made first place in the examination—then, as now, one of the most valuable possessions within the reach of graduates of medical schools in Chicago. In the fall of 1887, he took up his work as intern in the Cook County Hospital. In this capacity he came more closely under the instruction of Christian Fenger.

In December of that year he sustained an infection, for which he was treated by Christian Fenger. The eminent Fenger took time to write a kind letter to the father in Madison, informing him that Ludvig would soon recover.

Among others who were intimately associated with the great founder of pathology in Chicago were William Belfield, Clarence Earle, James B. Herrick, John B. Murphy, L. L. McArthur, Frank Billings, Malcolm L. Harris, Stanley P. Black, Weller Vanhook and E. R. LeCount.

Following his departure from the Cook County Hospital in 1889, Dr. Hektoen was made curator of the museum of Rush Medical College. His notice of appointment is dated Dec. 14, 1889; it is signed by Norman Bridge, recorder. His duties as curator were said to be "to collect, receive, prepare and preserve specimens in the museum under the supervision of the members of the faculty interested." On Dec. 16, 1889,



W. C. Bouton E. R. Moras Alfred W. Hornbogen Mary Jeannette Kearsley Ludvig Hektoen Alice Piper
(Later Alice P. Rud)
Necropsy, Cook County Hospital, 1887

Nicholas Senn, of Milwaukee, wrote him a letter of congratulation on the appointment as "a stepping stone to a distinguished professional career." Later, in May 1889, he was made registrar of the Cook County Hospital at a salary of \$75 per month. This position he resigned by February 1890, in order to take a position with the coroner of Cook County.

RECOGNITION

At this period in medical Chicago, affairs were moving with extraordinary rapidity. In June 1891 Ludvig Hektoen was appointed professor of general pathology in the College of Physicians and Surgeons of Chicago and was welcomed back to his alma mater by D. A. K. Steele, secretary of the faculty.

About this time, also, occurred a singular episode, typical of the period. On June 17, 1891, Ludvig Hektoen on the faculty of Rush Medical College was appointed dean of the medical department of the State University of Iowa, which position included also the professorship of didactic and operative surgery. Hearing of this appointment, the College of Physicians and Surgeons put in a substitute. Then it was found that Dr. Hektoen had refused the appointment in Iowa, and the College of Physicians and Surgeons elected him again.

Time moved on. In May 1892 he was reappointed professor of pathologic anatomy in the College of Physicians and Surgeons. In the meantime he had gone to Europe. There, in Habo, Sweden, in 1891, he married Ellen Strandh. In November 1894 came the offer of the position of professor of morbid anatomy and director of the laboratory of normal and pathologic histology, bacteriology and hygiene in Rush Medical College, with the understanding that he resign all connections with other medical colleges and that he study abroad until the opening of the next session of the school, in order to take advantage of new developments in other countries.

Many considerations, no doubt, were weighed in the ultimate decision, but at length Ludvig Hektoen elected to accept the position with Rush Medical College, a connection maintained almost to the present date. Here I insert a brief contribution by H. Gideon Wells, with a picture of the situation in Rush Medical College at that time.

Hektoen had just been appointed to the faculty of Rush—not as professor of pathology but as “professor of morbid anatomy”—and thereby hangs a tale. A few years earlier Dr. John Hamilton, formerly Surgeon General of the United States Army, had come to Chicago as editor of *The Journal of the American Medical Association* and, in view of his eminence, had been added to the Rush faculty, not as professor of surgery, which position was fully occupied by Nicholas Senn, but as professor of pathology, a position which at that date was not zealously sought. Now Nicholas Senn was not only a great surgeon; he was really far ahead of most of the pathologists of the day, and a pioneer in experimental pathology, especially in the study of the problems of the surgeon. With Senn covering so amply the fields of both surgery and pathology, there really was little chance left for Hamilton to distinguish himself. He was given some surgical work in the Presbyterian Hospital and the surgical clinic, where, being a plump little chap, he had to stand on a box to reach the operative field and with his rounded anterior line resembled very much an especially pompous robin to the caustic students in the amphitheater above him.

But, having the title of professor of pathology, Hamilton apparently felt that he should show that he really was a pathologist, and so wrote a textbook on pathology. His qualifications for this task may be indicated by the fact that whenever he was shown a section of one of the numerous tuberculous lymph nodes that the surgeons of the Gay Nineties found such a delightful object for demonstration of dissecting skill, he invariably exclaimed, “Oh, yes, tuberculosis. How numerous the bacilli are!” This, despite the fact that the section was stained only

with hematoxylin and eosin and was examined under a magnification of 50 diameters with one of the old hand microscopes, illuminated by a smelly oil lamp, which for many years circulated around the surgical amphitheater of Rush.

The profundity and reliability of Hamilton's book on pathology may be imagined. It came for review to a small local medical journal, and into the hands of one of the two chief contributors to this publication, who were Hektoen and Louis H. Mitchell, who for many years edited the *Railway Surgeon*. The published review was scathing and aroused the wild indignation of Dr. Hamilton. As the review was signed "L. H.," the blame was laid at the feet of Hektoen, although there was an unconfirmed rumor that Mitchell had really written it and signed his first two initials only, as a joke on Hektoen. I never asked Hektoen about the truth of this story, but to any one knowing Mitchell's proclivities as a practical joker, it seems quite possible. However, Hektoen was perfectly capable of having written the review, for he had the usual contempt of honest young scientists for sham and hokum. A few years later he aroused the ire and vengeance of an eastern pathologist whose book he reviewed by merely printing a series of preposterous excerpts from the text, letting the author be damned out of his own mouth.

In any event, he had made a bitter enemy of Hamilton, and so when the Rush faculty, seeing in Hektoen the up and coming young pathologist of Chicago, decided to offer him the chair of pathology and proposed shifting Hamilton to a subordinate position in the department of surgery, this was opposed by Hamilton, not that he objected to his own transfer but that he resented Hektoen's replacing him as professor of pathology. The matter was finally compromised by retaining Hamilton as professor of pathology and creating the "professorship of morbid anatomy" for Hektoen.

When Norman Bridge led me into Hektoen's office in the newly erected laboratory building on the south side of Harrison Street I met a slender, bespectacled, pompadoured young man of decidedly Scandinavian appearance and with a trace of the characteristic accent, wearing one of the lengthy Prince Albert coats that then rivaled whiskers in giving dignity to the medical profession and to which dear Dr. Charles Parker clung until his death but a few years ago. Hektoen had no whiskers, but he did have a mustache—a formidable one. When he found out that I had been for a year in Chittenden's laboratory, that I had had an elementary course in bacteriology, and thought I knew how to cut sections, he agreed to let me come into his laboratory as a voluntary student assistant—the first one he had in Rush. And so on my first day in Rush, in September 1895, I began an association which has continued until this day and which will undoubtedly last as long as we are both alive. For men who have been associated with Hektoen do not usually give up the relation willingly. They don't have to be with him constantly, or even often, but they do want to know that they can get in touch with him for his unfailingly sympathetic, wise and constructive advice on their problems, whether scientific, personal or professional. In the forty-two years of our relationship I have been to Hektoen innumerable times for aid or consolation, and never once have I failed to get the needed suggestion and encouragement, and always the advice has been wise, often with kindly salutary hints, so veiled as to carry the meaning without hurt.

Whatever his title may have been, Hektoen really was professor of pathology and bacteriology. The silent Dr. George Weaver conducted the laboratory work in bacteriology, a large job that first year, for the class of 1897 contained about three hundred men. This was because Rush was changing its course from three to four years, and there was a mad rush to get into the last three year class, which most decidedly swamped the school. Dr. Hektoen gave me a position as

laboratory assistant in bacteriology, since I had had enough of a course in this new subject to know how to inoculate a culture tube—but really I spent more time helping to prepare culture mediums and washing test tubes and Petri dishes for the noble three hundred of 1897. This class always boasted that it was the largest, toughest, noisiest and brightest class that ever entered Rush. When, years later, I was president of the alumni association and they reiterated this claim, I announced that they were entitled to a passing grade of 75 per cent on this statement, for on the first three items they were correct. Theoretically, there should have been no class of 1898 at Rush, for the men who entered in 1894 should have graduated in 1897, while those entering the four year course in 1895 should have graduated in 1899. Actually, there was a small group of men like myself, with a year of advanced standing for college work in the sciences, who started out as the class of 1898—probably the first medical school class except those at Johns Hopkins to consist almost entirely of college graduates. At first we were quite overwhelmed by the huge roistering mass of 1897, but in the next two years we received various additions of a motley lot of transferred dental and homeopathic school students, together with transfers from other medical schools and a few who could not keep up even the scholastic standards of the class of 1897, so that when we graduated there were about sixty.

Besides George Weaver, doubling in bacteriology and pathology, there was E. R. LeCount, doubling in anatomy and pathology—a terrifying figure. Hektoen never reprimanded but conveyed his disapproval indirectly and without discouraging even the most timid. This I learned almost immediately. I had learned section preparation by the paraffin technic, and knew of no other. Hektoen gave me a set of tissues from an autopsy and told me to prepare sections of them. Then I learned that all such tissues were embedded in pyroxylin, and I received the necessary materials but no instructions. So I got the tissues embedded in pyroxylin, mounted them on blocks and put them in my desk, intending to cut the sections the next day. I was astounded when I took out the blocks to cut them to find the tissues shriveled nubbins, mostly shrunken away from the blocks. Finding one still attached to the block, I tried to section it, but the microtome knife grated away its edge on the granite-like tissue, and my heart sank as I realized my complete failure on my first assignment. But Hektoen merely explained what the trouble was, gave me another set of tissues and without a word of reproach or reprimand started me off again to learn the technic, perhaps better than I should have without the lessons of my failure.

Small wonder that with this temperament and carrying on fascinating studies of postmortem and bacteriologic material, Hektoen inspired many of the best students to seek the opportunity to assist in autopsies (which LeCount correctly insisted should be called necropsies) and the other work in his laboratory. The spirit of Christian Fenger lived and grew in Ludvig Hektoen, and lucky were we who could risk infection of our gloveless hands in the necropsies he carried out in the Cook County Hospital, often in undertakers' establishments (then not designated as or resembling "parlors") and often in the homes of the deceased. With no technicians on the staff of the department, we cut the sections ourselves and worked up the cases, learning the necessity of keeping all things systematically recorded. And I take satisfaction in seeing how well some of the sections I prepared over forty years ago still look under the microscope. In the museum at the University of Chicago one of the best examples of color preservation by the Kaiserling method is in a specimen made by us students thirty-nine years ago and used for teaching purposes ever since.

In those cramped laboratories, reduced by providing living quarters for that genial bachelor Jimmy Harper, a lively group of youngsters assembled to get an idea of research ideals and methods, and grand times we had! Howard Ricketts and I, after finishing our internship in the Cook County Hospital, joined the group, he as "fellow in cutaneous pathology" to conduct his masterly studies in blastomycotic dermatitis and oidiomycosis and I as "fellow in pathology" to work first on Fourth of July tetanus and later on sundry other problems. With us were, among others, Martin Fischer, William B. Wherry, Rollin T. Woodyatt, Theodore Ticken, Noble Wiley Jones and "Artie" Dunn, and an active, disputatious but friendly group it was.

From that time onward, the career of Ludvig Hektoen is a series of new appointments and new obligations. In 1895 he became pathologist of the Cook County Hospital; in December 1896, a member of the attending staff; in October 1898, a member and chairman of the Committee on Examination of Embalmers for the Illinois State Board of Health. It is interesting to find on the back of this announcement a note which he must have been making in relation to some question of college policy, which reads: "It is the business of this college to educate scholars and investigators as well as passably fair doctors."

In 1895 he was made pathologist of the Presbyterian Hospital, and in 1901, professor of pathology and head of the department of pathology and bacteriology in the University of Chicago, with the understanding that two thirds of his time was to be spent in behalf of that institution. In November 1901 he became also pathologist of St. Luke's Hospital.

In 1899 the Board of Trustees of the American Medical Association examined a number of candidates for the position of editor of *The Journal of the American Medical Association*. Among other candidates appeared Ludvig Hektoen, Bayard Holmes, G. Frank Lydston and George H. Simmons. The last named, as history records, received the position, but the interest of Ludvig Hektoen in editing, publishing and writing has persisted throughout his career.

Again in 1903 he had to make a momentous decision. At that time he was offered the position of professor of pathology in the University of Pennsylvania. There were many reasons why the position in the East should have attracted him. The medical school of this university was the oldest and best established in the United States, of worldwide significance and a leader in the field of education. He would have succeeded Dr. Simon Flexner, who had resigned to become director of the Rockefeller Institute for Medical Research and who urged him to accept the position. Others who did their utmost to persuade Dr. Hektoen to accept this appointment were William H. Welch and William Osler. Yet Hektoen declined the position, feeling a definite obligation

to newly developed institutions in Chicago. What might the future have yielded for Chicago, for the University of Pennsylvania and for Hektoen had he accepted this appointment?

Medical developments which had been occurring in Chicago included the establishment in 1902 of the John McCormick Institute for Infectious Diseases, of which Dr. Hektoen became director. This institution was founded by Harold F. McCormick and Edith Rockefeller McCormick in memory of their son, John Rockefeller McCormick, who had died of scarlet fever. From this institution eventually came the work



Tom Freeman Ludvig Hektoen W.S. White Christian Fenger J.B. Herrick C.A. Earle H.R. Witwer

Necropsy, Cook County Hospital, 1888

of Drs. George F. and Gladys Henry Dick, establishing the cause of scarlet fever, a cutaneous test for susceptibility, a method of immunization and a specific antitoxin to be used in treatment.

As time moved forward, other and greater honors came to Ludvig Hektoen. His work began to receive worldwide recognition. In 1912 his colleagues and associates in Chicago presented to him an oil painting and a banquet, the latter freely interspersed with the following alcoholic liquors: cocktails, Amontillado sherry, Chateau Yquem and Ruinart vin brut. Notwithstanding this combination of stimulants, the addresses made on that occasion provided some factual data of importance for

this history. The biographic reminiscences were contributed by James B. Herrick, who had served with Hektoen as intern in the Cook County Hospital.

During these years, Dr. Hektoen had been a leading spirit in an abortive attempt to found a pathologic section of the Chicago Academy of Medicine. He was interested in the growth and activities of the Chicago Pathologic Society. But his crowning honor, as emphasized by Dr. Herrick, was the part he played in stimulating medical research in Chicago. He was the first to devote himself prominently and persistently to pure medical science as a science. Young men interested in research gathered about him, and soon one heard much of Hektoen's laboratory, Hektoen's school and Hektoen's men.

The intervening years had seen him honored by a call for the Harvey Lecture in New York City, the Harrington Lecture in Buffalo, an honorary degree of Doctor of Medicine from the University of Christiania and the Herter Lecture in New York. In 1913 the University of Michigan conferred on him the degree of Doctor of Science. In April 1915 he became chairman of the Committee on Scientific Research of the American Medical Association, associated with Dr. F. S. Novy, of Ann Arbor, and Dr. C. C. Bass, of New Orleans. As chairman of this committee, he has for many years aided in determining grants of funds for research carried out in various portions of the United States, leading in many instances to discoveries of the greatest importance.

In 1916 he gave the Cutter Lecture in the Harvard University Medical School, and in 1916 also he received the honorary degree of Doctor of Science from the University of Wisconsin. Then came the presidency of the American Society for Experimental Pathology, a membership in the National Academy of Sciences and an invitation in 1920 to deliver the Noble Wiley Jones Lectures in the University of Oregon. At the centennial celebration of the University of Cincinnati in 1920, he was awarded the honorary degree of Doctor of Laws.

In 1923 Dr. Frank Billings established the Ludvig Hektoen Fund in the Institute of Medicine of Chicago, in order to provide payment of an honorarium for a lecture each year. The first lecture to be given under that fund was one by Drs. George F. and Gladys Henry Dick on the subject of scarlet fever. It was Dr. Hektoen's foresight that resulted in the association of the research laboratory in the John McCormick Institute for Infectious Diseases with clinical material in the Durand Hospital, and it was his inspiration from 1914 to 1923 that eventually led to these great discoveries.

In 1924 he served as chairman of the Division of Medical Sciences of the National Research Council, and in the same year he was appointed consultant pathologist in the United States Public Health Service. In 1926 he served again as chairman of the Division of Medical Sciences

of the National Research Council. In January 1929, he received distinguished recognition from the Norwegian government, namely, decoration by the King of Norway with the Order of St. Olaf. In 1929 also he was chairman once more of the Division of Medical Sciences of the National Research Council. While engaged in this work in Washington in 1930 he contracted psittacosis. From the point of view of his character and habits he was the wrong man to be attacked by a disease called "parrot fever."

At the dedication of the Institute of Pathology at Western Reserve University, he was awarded the degree of Doctor of Laws honoris causa with the citation "pioneer pathologist of the 'Middle Border,' and identifier of hitherto unknown protein, foremost student of forensic medicine." In 1932 he was made a member of the National Advisory Health Council of the United States Public Health Service for a term of five years. In 1933, he was made an honorary member of the Norwegian Medical Association.

When the great depression came in 1929, the John McCormick Institute for Infectious Diseases began to find itself in financial difficulties. The Durand Hospital was closed, and patients with infectious diseases were no longer available for research. The subsequent death of Edith Rockefeller McCormick and the difficulties involving the estate made it fairly certain that the John McCormick Institute for Infectious Diseases would not receive sufficient funds to become permanently established. Dr. Hektoen, with increasing years, had retired as professor and head of the department of pathology in both Rush Medical College and the University of Chicago. He had for a while served as consultant of the laboratory service in the National Pathologic Laboratory, maintaining that organization on a high ethical plane of conduct.

Now, as he passed 70 years of age, one might have considered him entitled to a period of retirement in which he could devote himself largely to golf, swimming and the reading of lighter literature—three avocations with which he had largely concerned himself for many years. Yet as he approached 75 years of age there came new demands as vital and significant as any that had ever come before. From July 1936 to January 1938 he was chairman of the National Research Council. Today he is found in the position of executive director of the National Advisory Cancer Council under the National Institute for Health, which is a part of the United States Public Health Service; at the same time, he is a member of the board of directors and of the advisory board of the Chicago Tumor Institute, an institution not for profit, devoted to the study, diagnosis and treatment of cancer. For a long time he has had the position of member of the board of directors of the American Society for the Control of Cancer, so that he comes to the new position equipped by years of association and experience in this field.

CONTRIBUTIONS TO MEDICAL RESEARCH

The bibliography of the writings of Ludvig Hektoen which is appended to this article indicates the many phases of scientific medicine which have concerned him since 1888. His early interest in pathology is reflected in the numerous descriptions of pathologic conditions which constitute his chief contribution to medical literature until 1897. Here and there is interspersed a philosophic essay on the development of medicine. Then other essays on pathology began to be interspersed with essays dealing particularly with bacteriology and with the fungi, such as those of blastomycosis, actinomycosis and sporotrichosis, much of the fundamental work in this field centering in the city of Chicago.

In 1900 he began to be called frequently as expert witness in legal cases involving human pathology. Many of his papers reflect this activity. By 1905 and 1906 he had begun his studies on scarlet fever as part of the work of the John McCormick Institute for Infectious Diseases, and he had also undertaken the studies dealing with isoagglutination and the identification of blood groups that are so important in blood transfusion. In the latter field his contributions are original and fundamental. From 1908 onward he concerned himself particularly with antibodies, the opsonins, the agglutinins and the precipitins, and with such fundamental problems as the mechanism of their production and the specificity of their action.

During all of this time he maintained a personal interest in medical history and in those problems of social organization which involve medical knowledge. The published bibliography includes almost 300 references but fails to include great numbers of editorial contributions, book reviews, published letters, official reports and miscellaneous writings, which have greatly occupied his time for more than two scores of years.

It fails also to include many of his contributions to books, as well as his editorial work on appointments from time to time as editor of collections of writings of others. For instance, in 1913 he edited the collected works of Christian Fenger, a task which was not only a contribution to medical science but also, for him, a labor of love. Also a labor of sentiment and profound feeling was the editing of "Contributions to Medical Science" by Howard Taylor Ricketts, martyr to the advance in knowledge of typhus.

HIS LITERARY STYLE

In many instances men who have been trained in foreign languages previous to taking up English develop a simplicity and an economy of diction which give to their English writing style a directness that is

ideal for scientific medical literature. This Dr. Hektoen possesses to a superlative degree. No doubt, early recognition by his associates of his ability in this direction made him the ideal candidate for several editorial positions in the field of medical literature. He has been editor of the *Journal of Infectious Diseases* since it was first established in 1904. He has been editor of the *ARCHIVES OF PATHOLOGY* since it was first established in 1925. He has also edited the *Proceedings of the Institute of Medicine of Chicago*, and at various times he has been associated with the editing of the *Transactions of the Chicago Pathological Society*.

In the preparation of his essays he carefully compiles notes, which are kept in a loose leaf book. These notes are marvels of concentration. This ability to extract the meat from obese scientific discourses has been passed on from time to time to various of the young men who have been associated with him in his work. They have developed this skill only because of the hours of his own time that Dr. Hektoen has spent in carefully going over their literary contributions line by line, with each of them. He is such a stickler for economy in diction and in printing that he includes among his pet abominations wastage of large amounts of white space in margins, in titles and in other ways in both periodicals and books. For years he has campaigned against the use of long roman numerals when simple arabic numbers suffice. He has spent many hours of his time in eliminating needless illustrations from periodicals when a few actually instructive illustrations teach the important lesson. He has campaigned against needless "al" endings on adjectives and against fine or fancy diction. Generations to come will be saved thousands of hours of needless reading and study not only because of what he has done in this regard but because of the great numbers of editors and authors in this country who have come under his influence.

HIS CHARACTER

To those who know Dr. Hektoen intimately, he is the apotheosis of innumerable excellent qualities and characteristics. It would be easy to eulogize him in panegyric language, but he himself would be distinctly averse to such a performance. Many young men who came to him as representatives of the underprivileged third of the medical classes found him sympathetic and invariably helpful. Economical in his own finances and in his scale of living, he nevertheless was more than openhanded to all those who required his assistance. This generosity of time and materials and this inclination toward leadership of the young are, no doubt, the most important of all his personal characteristics. He is the possessor of a calm gentility. I have known him personally for twenty-eight years and can remember only two instances in which he displayed

sufficient anger to bring about a slight raising of his voice. No doubt, there have been occasions when he has indulged in the same kind of emotional upset that affects others, but that is with him extraordinary and never the rule.

He has withstood a buffeting in his personal life and ambitions such as has been the lot of but few men—a tragedy in the death of his daughter and her children and a financial debacle which resulted in the breaking up of the John McCormick Institute for Infectious Diseases and the Durand Hospital. Yet these created in him no permanent bitterness, cynicism or self pity. He met these tribulations with courage and with increased labor in his chosen fields.

Each of the students of Dr. Hektoen who contributed to this volume, and whose names follow, was asked to write a brief comment on Dr. Hektoen. The result was a series of eulogistic remarks, impossible to print, but indicating the great impression of this teacher on those who followed him.

His sense of humor has been unailing. His practical jokes are invariably kindly and sometimes marked by heights which have made them historic. The occasion when the bull on the billboard across from the Cook County Hospital suffered transmutation of its sex over night, the instance in which the organ grinder played before the tightly closed door of the laboratory of Dr. E. R. LeCount until bribed to depart, the time when Dr. Walter S. Haines was inexpressibly shocked by a gift of a volume dating back to the Elizabethan period with all of the bluntness of Elizabethan English—these have been recalled again and again when former assistants and students of Dr. Hektoen have chanced to meet. The students mention particularly his self criticism and objectivity, his kindness, his respect for history and tradition, his indefatigable industry, his simplicity and approachability, his originality, enthusiasm and resourcefulness, his inexhaustible patience, his flashes of humorous irony, his inspiration, his wisdom, his openmindedness, his insight, his loyalty and his friendship. Again and again his students thank him for teaching them incisive expression, orderly thinking, self criticism, leadership and cooperation. These characteristics he possesses with a consistency that reveals few lapses. I have never seen him manifest pride except after sinking an unusually long putt. I have never seen him inconsistent except in the difference between his golf drive when practicing and the motions that he uses when he actually hits the ball. These are sins that may well be pardoned.

IN CONCLUSION

In all his writings, Dr. Ludvig Hektoen has been a stickler for a well prepared summary and conclusion at the end of every scientific contribution. Many of the great with whom, in his time, he walked are

no longer with us. Were they among the living, this volume might well have contained contributions from Drs. Frank Billings, George H. Simmons, E. R. LeCount, Walter S. Haines, Joseph L. Miller, Christian Fenger and many other great contributors to the science of medicine with whom he worked as a colleague, but whom he equally inspired and stimulated to great performances. Were they still among the living, all would have eulogized him far beyond even the eulogies of his work which from time to time they have placed in print.

Dr. Hektoen was for many years typical of the advance of medical science in the Middle West. He sought little recognition beyond the city and state where he made his home. Yet such recognition has come to him increasingly with the years. This seventy-fifth anniversary of his birth finds him at the peak of a great career with all to admire, to cherish his friendship, to applaud his progress and to wish him increasing years untroubled by the vicissitudes of modern existence.

PHYSICIANS ASSOCIATED WITH LUDVIG HEKTOEN
FROM 1887 TO 1938

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 Aaron Arkin, Chicago
 Joseph L. Baer, Chicago
 Peter Bassoe, Chicago
 Paul Bergstrom, Chicago
 Maurice L. Blatt, Chicago
 Alden K. Boor, Chicago
 T. Harris Boughton, Trenton, N. J.
 Hugh R. Butt, Rochester, Minn.
 Joseph A. Capps, Chicago
 Anton J. Carlson, Chicago
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 George H. Coleman, Chicago
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 Harry B. Van Dyke, Peiping, China
 George H. Weaver, Wilmette, Ill.
 William H. Welker, Chicago
 Clifford W. Wells, Kingston, Jamaica
 H. Gideon Wells, Chicago
 Russell M. Wilder, Rochester, Minn.
 Nathan A. Womack, St. Louis
 Carrie I. Woolsey, Chicago

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