Double Exposure

Forced to flee Nazi Germany at mid-life, prominent physician Siegfried Thannhauser made Tufts his home for an impressive second career

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Never equaled
Ludwig Heilmeyer, professor of medicine, University of Freiberg

Siegfried Thannhauser was the first German clinician to completely master chemistry and cover a wide field of research with its methods. He did fundamental work with protein metabolism, nucleic acids, uric acid metabolism, cholesterol and phospholipids and much more. In 1929, Thannhauser was able to present an integration of all his work in the form of his textbook on metabolism and metabolic diseases, which was unique in German literature and has never been paralleled. What was amazing about this was the dovetailing of case histories, clinical findings and chemical metabolic analysis into a unified whole. It was not the work of a chemist, but a great doctor who had had personal experience of it all at the bedside.

Hello, stranger
Trudi Beyer, Thannhauser’s middle daughter

I worked at Harvard Medical School for a year or so in the lab of biochemist Dr. A. Baird Hastings. Dad was over at Harvard one day, and we ended up on the same elevator. We were standing side by side. When we got off, I turned to him and said, “Dad, weren’t you going to say hello to me?” He looked at me and said, “Oh, I didn’t recognize you.” But that’s just the way he was. He would get totally absorbed in what he was doing.

December 12, 1931

It was a crisp winter morning in Freiburg, Germany. The amphitheater of the newly built University Clinic on Hugstetter Strasse was packed with faculty members and students who had come for the dedication of this new medical facility of the ancient University of Freiburg. The mayor, bedecked in his ceremonial necklace, was there, as were the rector of the university and the bishop. There was standing room only. Many professors were dressed formally in cutaways with white bow ties decorating their white vests.

All had come to attend the dedication of the new clinic that had been especially constructed for Dr. Siegfried Thannhauser, the newly appointed professor of medicine and director of the University Clinic and Polyclinic. He had accepted the call to the chair in Freiburg at the age of 46 with a distinguished record in biochemical science and clinical medicine. Thannhauser was a tall, athletic man radiating confidence, charm and ability. He looked up at the faces filling the room; his wife and friends were also there. Thannhauser began slowly, as he traced the roots of German medicine back to Hippocrates. Then he became more animated as he expressed his priorities for the department that he would now lead.

Thannhauser began by recalling that Plato had stated that it was the responsibility of the nation to educate worthy physicians, and it was in recognition of this duty that the State of Baden and the city of Freiburg had joined in building the new clinic on Hugstetter Strasse. Thannhauser thanked the representatives of these governing agencies on behalf of future medical students who would gain from their generosity. Toward the conclusion of his remarks, Thannhauser quoted the words of the apostle Paul to express his leitmotifs for the new clinic.

“Faith, hope and love! Faith in ourselves and faith in the spirit that gives us confidence and strength in our calling. Hope for the success of our clinical endeavors, hope in advances in biomedical science that will enable us to triumph over disease, hope for the rebuilding of our beloved Fatherland, and hope that German culture will never be extinguished...We will give love, and we will receive it. Then and only then, when we radiate a love stronger than death, can we educate and inspire physicians. Our teaching will be based on these principles.”

With these stirring words of optimism and idealism, Siegfried Thannhauser opened the University Clinic in Freiburg. But his hopes were never to be realized. Three years later, he was dismissed from his
post because of his Jewish ancestry.

Sitting proudly in the front row of the auditorium, his wife, Franziska, heard him talk about his dreams for the future. At the time, she had no idea how unsettled she would be three years later at the increasing persecution by the Nazis. In 1934, Thannhauser, no longer a professor, traveled to Boston to look at a position at the Boston Dispensary [later to become the New England Medical Center], an outpatient clinic. A year later, with the generous support of the Rockefeller Foundation, Thannhauser, his wife and their three daughters immigrated to the United States to build a new life in a new country. During the Second World War, the clinic building he had officially opened was destroyed by American bombs.

Thannhauser was never to return to his beloved homeland.

The early years

Siegfried J. Thannhauser was born in Munich on the 28th of June, 1885 and died in Brookline, Mass., on December 18, 1962. During the 77 years of his life, he had lived through and suffered under the earth-shaking political changes that occurred in Europe during the first half of the 20th century. Coming from a prosperous and secure Jewish background, he achieved great professional success, being appointed to the chair in internal medicine at Freiburg. He, as other Jewish faculty members at the University of Freiburg, was subjected to such persecution that he and his wife decided to leave Germany with their three daughters and immigrate to the United States. Here, at the age of 50, he had to begin a new career in research and clinical practice. His achievement in Germany and the United States, together with the equanimity with which he mastered his fate, have been an example for a generation of German physicians.

Thannhauser was born in a huge house in one of Munich’s best neighborhoods. His father and his mother had developed a highly successful ceramic business that produced chamber pots and beer mugs. Their factory also cast the pewter lids for the mugs. Thannhauser weighed 22 pounds at birth, and his delivery was so difficult for his mother that she decided never to have another child. As a result, he was an only child who grew up pampered by his parents.

In those days, Munich was just a small city, where everyone knew everyone else. The multi-talented Thannhauser was advised to become a pianist. He himself had originally planned to study art history, before eventually opting for medicine. Alongside this, he also read chemistry. We may well wonder whether his classmate, Albert Einstein, had any influence on this decision or whether the then broad-based, traditional gymnasium education played a part. At any rate, Thannhauser always bridged the gap between science, in this case chemistry, and art. From his love of art and of describing it came his ability to observe keenly and to challenge his colleagues to do the same. He would dispatch privileged students to art exhibitions with instructions to look at a selected picture, next day asking them the color of the garments worn by a minor figure to test their observational skills.

Thannhauser’s doctoral thesis (1910) bore early testimony to his interest in chemistry. He wrote it on homogentisic acid; the influence of Otto Neubauer, at the time working on tyrosine metabolism, is obvious. However, of greater significance than Thannhauser’s meeting with Neubauer was his meeting with Hans Fisher, which made the young Thannhauser decide to study chemistry, too, once he had completed his medical course. In 1912, the chemistry course under Adolf von Baeyer led to a doctorate on a breakdown product of hemoglobin.

Back at the Muller clinic, Thannhauser worked not on amino acids or porphyrins, but at the request of his boss, on the chemistry of gout. Together with several colleagues, Thannhauser showed that intravenously administered purines and purine nucleosides brought about an increase in uric acid excretion broadly equivalent to the quantity of purine administered, thus demonstrating that large-scale uric acid breakdown does not take place in the human body. That meant that changes in uric acid breakdown could no longer be regarded as a cause of gout; this had to lie in other areas of purine metabolism. Logically, Thannhauser turned to these areas. However, purine synthesis and uric acid formation from purines performed in the body

That calming touch

Marty Beyer, granddaughter

It was a family joke about my grandfather that “having patience” was very different from “having patients.” When it came to mechanical things or waiting or events not occurring as he expected, my grandfather was impatient. But with patients, he was calm and responsive, spending the time with them that they needed.

I do not recall what Opa [Thannhauser] was treating them for or any of the content of their German or English bedside discussions. What I remember with clarity was his manner. Although it might seem out of character with a person who drove himself to accomplish so much research and writing, Opa soothed patients. I could sense his patients feeling calmed, an experience I have never forgotten.
The great man at home
H. Weicker, visiting German researcher, 1959–61; professor of medicine, University of Heidelberg

I remember in detail my first invitation to a dinner in the pretty New England-style home of the Thannhauser family in Brookline. I was greatly impressed by the dignity of Mrs. Thannhauser, a patrician from old Munich, as well as by the warmth and kindness with which she welcomed me.

The tenderness that the couple displayed toward one another and the interesting, very stimulating discussions made the visit a memorable experience and were intensified after my family returned to Boston. The evenings with other very stimulating guests, such as Brigitte Horney and her husband, the director of the Museum of Fine Arts, also gave an insight into the diverse interests of the Thannhauser family. These visits always showed me how European tradition had been integrated into the American lifestyle.

were unresearched areas. So, to begin with, he concentrated on studying purine compounds.

He was the first person to isolate and crystallize a series of nucleotides, including adenyl acid, mainly with Dorfmuller and later with Ottenstein. These experiments also included some “firsts” for biochemistry, e.g., they were the first time that enzymes were used for structural clarification. At the same time, various other experiments were conducted, prompted by the chemical thinking in the clinic at the time. For example, Thannhauser described the use of glucose loading in the diagnosis of diabetes, and the fall in cholesterol ester levels, known as the “ester crash,” as a finding typical of liver damage. But only within his closest circle did he indicate that, long before the scientists with whose names glucose loading and ester crash are now associated, he had made and reported in essence the same observations.

Thannhauser's career was no less logical than a scientific development. In 1924, the faculty in Heidelberg appointed the 38-year-old to head its outpatient department. Shortly afterward, Thannhauser was invited to the chair in Düsseldorf, and in 1930, he was offered the Freiburg chair, one of the most important in internal medicine. His rise in status was accompanied by responsibilities that he shouldered easily at the time. He did a great deal of writing, assisted by a gift for observation, knowledge, and humor. He even wrote books and chapters on kidney and lung diseases, although these were subjects fundamentally far removed from his research interests.

Physician in exile
The seizure of power by the National Socialists put a temporary stop to the glittering career. Disappointed with a Germany that he loved ardently and shaken by the betrayal of many friends, Thannhauser looked for a way to go abroad. After studying various offers, he decided to accept Dr. Joseph Pratt’s invitation to Boston. The Rockefeller Foundation provided the resources to set up a laboratory. The 50-year-old Thannhauser, with a poor command of English, moved with his family to the United States. His new workplace became the Boston Dispensary, a facility of Tufts Medical School.

German brain drain
Dr. Siegfried Thannhauser was not the only highly respected doctor to leave Germany for Boston in the 1930s as Hitler began to cast his shadow across Europe. Many others also fled. Together, a number of these exceptionally talented researchers and physicians helped raise the fledgling New England Medical Center—and with it Tufts Medical School—to new eminence.

“Despite Germany’s decline from the pinnacle of world medical leadership, it still had a great number of outstanding physicians,” notes Herbert Black in Doctor and Teacher, Hospital Chief (Globe Pequot Press, 1982), a history of Dr. Samuel Proger and his tenure at NEMC. “Some of them came to Boston because of their friendship with [Boston Dispensary chief of medicine] Dr. [Joseph] Pratt, joining what later became known as the German scientific brain drain.”

In addition to Thannhauser, the batch of distinguished physicians-in-exile included Dr. Alice Ettinger, a young German radiologist who arrived at the Dispensary in 1932 and went on to become chief of radiology at NEMC; internationally known internist Dr. Heinz Magendanz; Dr. Alfred Hauptmann, who had been director of the Neuropsychiatric Clinic at the University of Halle; ophthalmologist Dr. Joseph Igersheimer; internist Dr. Jacob Schloss; Dr. Heinrich Brugsch, later medical director of the Prudential Insurance Co.; pioneering diabetic researcher Dr. Martin Nothman; and Dr. Gerhard Schmidt, former head of the biochemistry department at the University of Frankfurt who conducted research with Thannhauser and became a world authority on nucleic acids and phospholipids.

Bruce Morgan
A throng of eminent internal specialists gathered around Pratt and Thannhauser, quickly enhancing the institute's importance. Generous donations made it possible to add a diagnostic hospital to the Dispensary. This has become the New England Medical Center, the central diagnostic and therapeutic institute in the northeastern United States. The people who worked there with Thannhauser include the hematologist Dameshek, the endocrinologist Astwood, the rheumatologist Heinrich Brugsch and the nephrologist William Schwartz. The beginnings created by Pratt and Thannhauser had evolved into one of the most exciting medical centers in the world.

The Thannhauser lab was situated underneath the roof of the old Dispensary building. In summer, the temperatures often hit 90 degrees F. Most of the staff were scholarship holders from the United States, but some were from other parts of the world—Spain, France, Germany, Lebanon. Physical contact with desk neighbors was unavoidable, but contributed toward the atmosphere. The shared use of large pieces of equipment caused bottlenecks, which were cheerfully overcome: “Who’s using the centrifuge now?” was frequently heard. There was a friendly wrangling for time on the first spectrophotometer, which at the time was a great advance in terms of equipment. Afternoon coffee was shared at around 3 p.m.

The head of the laboratory was Gerhard Schmidt. Schmidt, too, was an emigrant; he, too had already recognized that enzymes could be used for structure elucidation. When he joined the Thannhauser laboratory, he started studying the specificity of ribonuclease from the pancreas and phospholipid breakdown products. Both topics were to lead to important advances in the knowledge of nucleic acids on the one hand and phospholipids on the other hand. (The spirit of Schmidt’s superb biochemical work is kept alive in the annual Gerhard Schmidt Lecture sponsored by the Department of Biochemistry.)

Thannhauser was by no means the last person to arrive in the laboratory in the morning. He worked at the bench and experimented until his clinical secretary reminded him, sometimes several times, to honor his clinical obligations. Before he did

Money back
Dr. Herbert Levine, senior cardiologist, NEMC

Toward the end of his life, Thannhauser was hospitalized here on Pratt 6, which was kind of our Gold Coast back then. The intern treating him was trying to insert a gastric tube and couldn’t get it inserted properly. Thanhhauser, who spoke with a German accent, said, “Young man, vare did you go to medical school?” “Johns Hopkins, sir,” the intern answered. Thannhauser told him: “You should get your money back!”

Tough audience
Dr. Jerome Kassirer, distinguished professor of medicine, Tufts Medical School

Thannhauser and Dr. William Dameshek were friends. Dameshek was about as headstrong and stubborn as Thannhauser and they used to match wits at conferences. One time at a conference, someone mentioned an article and Dameshek commented that he had read the article. Hearing this, Thannhauser leaned forward and said in a stage whisper, “Yah, but did he understand it?”
No contest
Dr. Justin Richman, '49,
Thannhauser's physician
during the last years
of his life

There was a certain Dr. Snapper who used to be chief of medicine
down at Mt. Sinai in New York City. He was a Dutch Jewish
doctor who was a worldwide
authority on tropical diseases. He
always signed his papers "I. Snapper," and he was something of an
arrogant man. Thannhauser liked
to deflate that kind of arrogance
when he could. Snapper came up
to Boston one time for Grand Rounds, spotted Thannhauser
seated in the audience and said,
"It so happens that my interest in
today's topic goes back to the
time when Dr. Thannhauser and
I were competing to be the most
famous doctor in Europe." To
this Thannhauser said, loud
enough for everyone to hear,
"I wasn't aware that I had any
competition."

so, he discussed the day's other experiments
with his assistants. This was often followed
by discussions with Schmidt, which the
other members of the laboratory rushed to
overhear.

Thannhauser's vision, articulated in his
inaugural lecture in Freiburg, was the unity
of biochemical knowledge, clinical practice
and education. This trinity of excellence in
research, education and practice continues
to this day and is part of the logo of
institutions such as the Mayo Clinic.

To these aims, Thannhauser brought a
rare wealth of talents. As a teacher, he was
lucid, humorous and scholarly with a pro-
found knowledge of the science of bio-
chemistry and clinical medicine. As a
researcher, Thannhauser brought clarity,
penetrating intelligence, total honesty and
a lucid writing style. From all that is writ-
ten about him, one concludes that
Thannhauser's greatest attribute was his
presence. He filled a room. When he saw a
patient, he radiated warmth, wisdom and
caring. It was this aspect of his personality
that led displaced refugees in America to
seek his medical advice after his arrival in
Boston.

Although he constantly reiterated the
need for basic medical knowledge, his great-
est priority was to unite his deep scientific
knowledge and his understanding of the
human condition in the care of his patient.
In his book, he writes, "It is the noble task of
the academic teacher to imbue future gener-
ations of physicians with the idea that med-
ical reasoning should never be based on
arithmetic figures alone, but rather should
be guided by the conception that every
patient is a new experience and a challenge
to the keenness of our senses."[12]

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