behind the br

Samuel Colville Lind

By: Bethany Steichen

Combining the diverse interests of a College of Engineering, School of Chemistry, School of Mines and an Experiment Station into a single, cohesive Institute of Technology requires finesse and wide range of interest. With his background in everything from Greek to radiation, Samuel Lind was exactly the right administrator for the task.

Samuel Lind, the first of five children, was born in 1879 in the small town of McMinnville, Tennessee. He had a childhood steeped in the respectable life of the South at that time – church and family events dominated the social scene. As for school, Lind states in his memoir, "those were days of earnest study and three hours of homework at night—no movies—no autos—not a public eating place in town."

After finishing high school at age 16, Lind enrolled at Washington and Lee University in Virginia. He received a B.A. after four years of primarily studying languages – French, Greek, Latin, German, and Anglo-Saxon. It was not until his senior year, when he needed six science credits to graduate, that he turned to science. He chose chemistry because it was thought to be the easiest. A particularly inspiring chemistry teacher convinced Lind to stay on at Washington and Lee even after graduating to take the more chemistry along with a few courses in geology and mineralogy. These subjects later became the focus of his life-long research.

In 1900, Lind began taking classes at MIT. At that time MIT did not offer graduate programs, but he did act as a teaching assistant and participated in directed research.

At the end of 1903, Lind accepted a two-year Dalton scholarship and used it to study in Leipzig, Germany. His work there was in determining and understanding reaction rates for hydrogen-iodine and hydrogen-bromine reactions.

While this research has become the classic example of complex kinetics that can be rationally explained (and earned Lind a Ph.D), it did not come without incident. For example, Lind was mixing boiling chromic acid when his advisor entered wearing a new suit. The beaker broke, spraying corrosive liquid around the room. The professor was doused in water to prevent injury, but the suit didn't fare as well.

After finishing his degree at Leipzig, Lind accepted a teaching position at the University of Michigan. He spent five years with the physical chemistry teaching lab, but missed researching. This led Lind to take an opportunity to work in Marie Curie's lab in Paris in 1910. Although he did not work directly with her, he did gain valuable experience in handling radioactive material that would serve him well later in his career.

Next he moved to Vienna and worked at the Institüt für Radiumforschung on the formation of ozone. Lind wanted to continue this research when he returned to Michigan, but was limited by the scarcity of radium.

In 1913, Lind joined the US Bureau of Mines' project to extract radium from Colorado carnotite deposits in sandstone. Out of thirty tons of carnotite, eight and a half grams of radium was obtained. Of this, half a gram was given to Lind to do with as he pleased. Lind made this half gram last throughout the remainder of his studies. It should be noted that little was known about the dangers of radiation at this time. Although Lind was heavily exposed, and often directly handled the radium, he experienced very few side effects. The most noticeable was that half of the skin depth was worn off on a few of his fingers from handling the radium and thus lacked fingerprints on those fingers. It was around this time that Lind married his love, Marie Holladay. She was an avid traveler and joined her husband on all of his trips.

In 1920 Lind moved from Colorado to Nevada and began studying the coloration of diamonds with radiation. Lind found

FILE PHOTOS

ricks

lind hall

No Institute of Technology student at the University of Minnesota can complete their time here without passing through the Lind Hall at least once. But few know about the man that "Main Engineering" is named after. This installment of the "Behind the Bricks" series is aimed at giving insight into the first dean of the Institute of Technology, Samuel Colville Lind.

that diamonds could be colored green with radon gas. Green diamonds are extremely rare in nature and are therefore the most expensive variety. The radon gas process was able to cover the yellow tinge that devalues other diamonds to the point that they are not usable as jewelry. This suggested that with the use of radon gas, a highly valuable diamond could be made from one that was nearly worthless. Unfortunately, diamonds produced this way were too radioactive to be worn and the project was abandoned.

In 1926 Lind accepted a position as the head of the School of Chemistry at the University of Minnesota. As head, he brought in a number of new faculty members—many of whom were highly regarded and awarded for their research and teaching abilities.

In the 1930s, U of M president Coffman called for the combining of the School of Chemistry, the College of Engineering, the School of Mines and the Mines Experiment Station into the Institute of Technology (although MIT strongly objected to the terminology). Lind was chosen to be the first dean of this new Institute.

As dean, Lind took a similar approach as he had with being head of chemistry. He appointed excellent faculty and allowed each department to operate with some independence. He was able to bring renowned faculty members to the University from all over the world and increased the U of M's status as a top research and learning facility.

National societies also took notice of Lind, and he was elected president of the American Electrochemical Society, president of the American Chemical Society, and a member of the National Academy of Sciences and the American Philosophical Society during his tenure at the University.

He took over the editorship of the Journal of Physical Chemistry and revived it. The publication had not adopted modern ideas in chemistry and consequently was viewed as being filled with inconsequential studies and poor scientific methods. Before Lind took over, the journal was banned from some institutes such as the California Institute of Technology.

Lind was also well loved and respected in the University because of his lively sense of humor and unassuming nature. In his memoir, Lind credits himself only for making wise decisions in appointing people; beyond that he credits the department heads as the reason for the Institute of Technology's success.

Of the twenty-two years spent at the U of M, Lind states, "I am most gratified by the contacts and friends I made there." After his retirement in 1947, Lind remained in Minneapolis and did some research work at the University in radiation and nuclear power. His belief was that Minnesota's greatest industrial set back was a lack of local fuel sources. If nuclear energy could be generated, Lind believed that Minneapolis could become an industrial center like Chicago and Cleveland.

In 1948, Lind attended a conference in Oak Ridge, Tennessee, and became fascinated by the Atomic Energy Commission's (AEC) laboratories. He became a consultant for Union Carbide—the company with the contract to run the labs. Lind and his wife moved to Oak Ridge, and Lind worked on separating uranium-235 by gaseous diffusion of hexafluoride. Over the next few years, Lind and his co-researchers would publish significant papers on radiation induced polymerization.

At the age of 86, Lind was pursuing his life-long hobby of trout fishing when an upstream dam broke. The strong rush of water was too much for Lind to withstand and he drowned, leaving a wife and a long legacy of research, solid administrative decisions, and kindliness behind him.