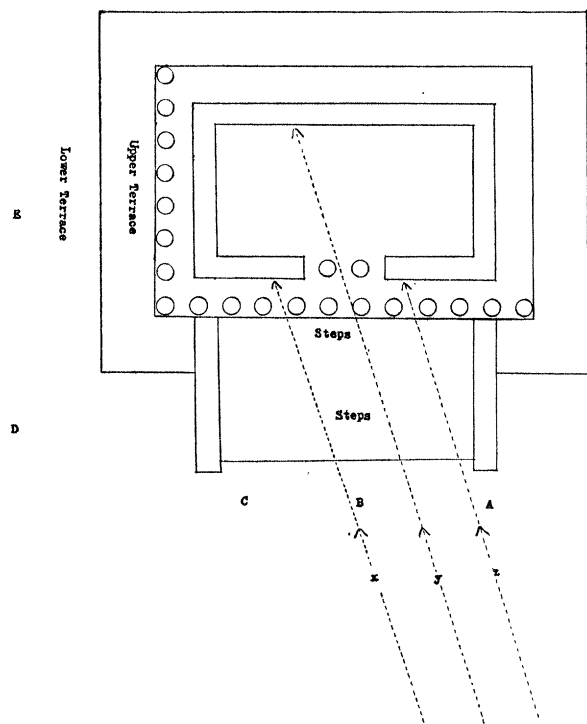


three quarters of a mile distant, is indicated by the dotted arrowed lines x, y, z. In the position A, at the bottom of the main steps of the approach, no echo was apparent. But as the observer approached



the point B a faint weird echo of high pitch began to be heard after each report of the exploding fireworks. As the observer continued towards the point C the intensity of the echo increased, its tone being of a shrill metallic quality, somewhat prolonged and resembling the sound produced by a file when drawn across the teeth of a saw. As one proceeded around the corner of the memorial towards the point D on the lower terrace the echo gradually changed to a lower pitch of more prolonged duration, the sound at this place resembling the sharp tearing noise produced by ripping a piece of cloth. As one passed onward towards the rear of the memorial the echo grew constantly fainter and ceased entirely at about the point E.

C. A. BROWNE

### THE LUNELL HERBARIUM

BOTANISTS interested in the taxonomy of the flowering plants have long been familiar with specimens collected by J. Lunell, of Leeds, North Dakota.

Born in one of the well-known castles of Sweden, in 1851, where his father was rector, Dr. Lunell emigrated to the United States at about 37 years of age, bringing with him the responsibility for a family of three children.

After a year devoted to the practice of medicine in St. Paul, he felt the irresistible call of the frontier and took up his work at Willow City, North Dakota, in 1889, at a time when cities were but names which expressed the hopefulness and ambition of those who were living in dugouts, sod houses or board and tar paper shelters. He remained there for about five years before taking up his permanent residence at Leeds, North Dakota. From the first moment of his arrival he began to collect and study the plants of the region. As a student, his leisure time had been devoted to the collection of plants, all of which were left behind when he came to the United States. Demands for the services of the one doctor often crowded out eating and sleep, but if the long outgoing journeys permitted no opportunities for delay, the return trips always afforded a means for noting and collecting plants of particular interest. It is a great misfortune that there were not more such men to study and preserve for future reference actual specimens of a flora which has now largely disappeared through the ravages of fire and the inroads of agriculture.

While Dr. Lunell is known widely to taxonomists through his collections, and his systematic botanical notes and papers, perhaps few are aware that he was a man of highly varied interests. Graduated from the University of Upsala, he read Latin, Greek and Hebrew as well as the modern languages. Before coming to America, in addition to the translation of technical writings, he had made some of the writings of Mark Twain, Marryat, Savarin and other French and Russian authors available to those whose reading was limited to the Swedish language. His volumes of classical music, well worn by use at his own piano, were about as numerous as the bound botanical works of his small library.

Since Dr. Lunell's death, at sixty-nine years of age, in 1920, his herbarium has been little used by botanists. It is unfortunate that there is not now more local interest in collections of the plants and animals of the various regions of the United States, but until such local interest exists, it is desirable that collections of this kind, made by those when fired with enthusiasm for scientific work, even under difficult conditions, be ultimately assembled in centers where they can be available to students.

Students of the flowering plants will be interested to know that the Lunell herbarium has been purchased by the board of regents of the University of Minnesota for the department of botany. In the course of a few months, the materials will be incorporated in the herbarium and there be available to students who may wish to use them.

J. ARTHUR HARRIS