mis, thus connecting the intercellular spaces with the outer air. By this method transpiration was found to decrease proportionally as relative humidity increased. The straight line relation led to the conclusion that a relative humidity of 105 would be required to reduce transpiration to zero.

C. S. Scofield, "Chinese Wild Rice," with lantern (to be published later).

Dr. P. Spalding, "Present Status of the White Pine Blister Rust," with lantern (to be published as a bulletin of the Department of Agriculture).

R. Zon, "Meteorological Observations for Purposes of Botanical Geography, Agriculture and Forestry," with lantern.

The inadequacy of the present climatic data for the purposes of botanists lies not so much in the kind and character of observations that are being recorded as in the manner of their classification, their grouping and computing.

To properly understand plant life, it is essential to group meteorological data by actual periods of growth and rest. During each of these two periods plants react to temperature of the air in an altogether different way. The temperature records of the temperate region of the United States should be computed separately on the basis of the normal monthly mean not reduced to sea level for the period of rest or the period of growth, and in some localities also for a third period, the hot period. The period of rest should include all months having a normal mean temperature of 48° F. or less. The period of growth should be included, all months having a normal monthly temperature of from 50° to 72° F. The hot period in temperature latitudes should embrace months with a normal average temperature of more than 72° F.

A map showing localities with the same duration of the periods of growth and rest has been tentatively prepared.

Aside from monthly mean temperatures the average temperatures by periods of ten days (decades) are also desirable, and also the mean temperatures for periods when the ground is covered with snow and periods when the ground is bare. Similarly, the mean temperature for each period during which certain winds prevail.

Summation of temperatures, as suggested by Bussengo and de Candolle, do not indicate the actual requirements of plants for heat, since they overlook the existence of an optimum temperature for the development of each plant.

Groups of days with a given temperature are considered preferable, and the following classification is suggested:

1. *Freezing days*, with a daily average of 32° or less. These are further subdivided into: (a) Freezing days without thawing; (b) freezing days with thawing.

2. *Cold days*, with an average daily temperature ranging from 32° to 40° F. This group should be further divided into: (a) Days with frost; (b) days without frost.

3. *Cool days*, with an average daily temperature from 40.1 to 50° F. This group should be divided into: (a) Days with frost; (b) days without frost.

The paper discussed also the temperature of the soil, humidity of the air, precipitation, snow cover, soil moisture, sunshine and barometric pressure.

P. L. RICKER,

Corresponding Secretary

THE ST. LOUIS ACADEMY OF SCIENCE

"MOUNDS and Mound Builders" was the subject of a lecture by Dr. H. M. Whelpley, at the February 16 meeting. It was illustrated with lantern slides.

The lecture dealt particularly with the mounds of Illinois and Missouri. Strictly speaking, there was no race of mound builders, mounds having been built by primitive peoples, the world over. Indian mounds were discussed and their various types explained. The important Cahokia Group, in Madison Co., Ill., was considered in detail. The general arrangement and location of these mounds was clearly shown in a series of maps of the Long Lake, Bluff, Forest Park, St. Louis, Cahokia and other subgroups. It was shown that at the time these mounds were built, the Mississippi River probably was close to the Illinois bluffs, so that they were all originally on the west side of the stream, a fact which helps to explain their similarity. From their nature, it is evident that many years must have been required for construction and the archeological evidence points to their having been built by an agricultural people, quite different from the Cahokia Indians whom white men found here. Some views as to their possible use were considered. The plan of Monks', or better, Cahokia Mound was discussed and a number of early drawings and diagrams were thrown upon the screen. The known history of this mound was reviewed. Attention was called to the artistic possibilities of mounds and the agencies tending toward their destruction were emphasized. The speaker closed with a plea for the preservation of these wonderful relics of earlier ages.

G. O. JAMES,

Secretary