Isoetes in North Carolina: W. C. NORTON, North Carolina College of Agriculture and Mechanic Arts, West Raleigh.

The Composition of Melted Kauri Copal, as Used in Varnish Making: CHARLES H. HERTY and C. S. VENABLE, University of North Carolina, Chapel Hill.

Results of some Preliminary Studies in Wing Vein Homologies, Homoptera cicadina (lantern): Z. P. METCALF, Department of Agriculture, Raleigh.

Regressive Differentiation in Hydroids and Sponges: H. V. WILSON, University of North Carolina, Chapel Hill.

A Striking Class-room Experiment after Otto von Guericke (by invitation): J. M. PICKEL, Department of Agriculture, Raleigh.

Recent Changes of Level from Cape Hatteras to Cape Sable (lantern): COLLIER COBB, University of North Carolina, Chapel Hill.

How to Discover the Solution of a Problem: JOHN F. LANNEAU, Wake Forest College, Wake Forest.

Mineralogical Notes on Rutile, Pyrophyllite, Talc and Graphite: J. H. PRATT, Chapel Hill.

Some Interesting Variations in the Flowers of a Local Vinca: W. C. NORTON, North Carolina College of Agriculture and Mechanic Arts, West Raleigh.

Road-surfacing Materials: JOSEPH H. PRATT, Chapel Hill.

Some Seedlings of the Scuppernong Grape (by invitation): F. C. REIMER, Department of Agriculture, Raleigh.

The Postulates of Relativity: C. W. EDWARDS, Trinity College, Durham.

E. W. GUDGER,
Secretary

SOCIETIES AND ACADEMIES

THE AMERICAN PHILOSOPHICAL SOCIETY

AT the meeting of the American Philosophical Society, Philadelphia, on May 5, 1911, an address on lignite was delivered by Dr. Joseph A. Holmes, director, Bureau of Mines, Washington, D. C.

The extent of the lignite deposits in the United States will be realized from the following figures giving the areas in several of the states:

Alabama	6,000
Tennessee	1,000
Louisiana	8,800
Arkansas	5,900
Texas	53,000
South Dakota	4,000
North Dakota	31,000
Montana	7,000

In a number of states in the Rocky Mountain region there are large areas of coal that represents a transition between typical lignites and bituminous coals. For these the name "subbituminous coals" has been suggested, and is tentatively used by the United States Geological Survey.

The lignite beds in Alabama, Mississippi and Tennessee represent a transition between peat and the more typical lignites of the Dakotas and Texas. Little or no use has been made of the lignite beds in these three states.

The lignites in Texas and Arkansas have been used to a limited extent; as have also the lignites of the Dakotas and eastern Montana. In this latter field the lignites contain 20, and in some cases more than 40, per cent. moisture, and slack badly and rapidly on exposure to the atmosphere; and this quality seriously interferes with their use and value for fuel purposes.

The outlook for the utilization of lignites is favorable along three lines: (1) In gas producers, without either drying or other treatment; (2) in boilers of special construction, such, for example, as that installed more than a year ago at Williston, N. D., by the United States Reclamation Service, where the lignite is used in its natural condition almost immediately after being brought from the mine; (3) in the form of briquettes. This requires that the lignite should be thoroughly and finely crushed and dried to a moisture content of from five to ten per cent., and then compressed while still warm into briquettes.

Limited quantities of lignite from California, North Dakota and Texas have been made into satisfactory briquettes at the Government Mine Experiment Station at Pittsburgh, using the full-sized German briquetting press, which develops a pressure of twenty to twenty-five thousand pounds per square inch. In the cases just mentioned the briquettes were made without the use of any binding material, a sufficient amount of tarry material remaining in the crushed and dried lignite to serve as a bond to hold the particles together in the briquette.

It is believed that our investigations along this line will demonstrate the fact that the lignite in Texas, and the Dakotas and Montana can be made into briquettes on a commercial scale, and that in this form the lignite can be used as a substitute for other domestic fuel in these regions.