yielded an extract of practically the same conductivity as 1 hour's extraction.

The method adopted in testing the series of flour samples was essentially as follows: 10 grams of flour were shaken up with 100 c.c. of carefully prepared conductivity water in a Jena glass flask, and the mixture maintained in an ice bath at 0° for one hour. During this time the flask was shaken vigorously every 10 minutes. The contents of the flask were then placed in a tube and whirled for about 5 minutes in a large centrifuge. The supernatant liquid was filtered, returning through the filter until clear, and clear filtrate placed at once in the conductivity cell. The latter was immersed in a water thermostat at 30° and brought to temperature. The conductivity was determined in the conventional manner, the usual and necessary precautions being taken to insure accurate results.

The series of conductivity measurements shown in the following table were made with the collaboration of Mr. E. H. Doherty. The samples have been classified by groups as they are known to the miller. If these are rearranged in order of their ash content it will be found that with the exception of one group, and a single member of another group, the conductivity parallels the ash content. The group which presents the exception is the break flours, four of the five having lower conductivity values than would be expected from their ash content. The large proportion of variation in this group of flours suggests the operation of some factor in the break flours which does not appear in the other flours. The only other variation from the otherwise uniform parallelism between the percentage of ash and conductivity of the water extract is found in the third low grade. The conductivity here is lower than would be computed from the ash content. The data at hand do not indicate the exact reason for these relatively small deviations.

The possible value of this test of flour grade is indicated by this preliminary investigation. The determinations can be made with ease and speed when the equipment is assembled, and the technique acquired. We propose to carry the study farther when research of this character can properly be resumed. In the interval it seemed advisable to present these findings, that they may be applied if the method proves to be as well suited to this purpose as appears at this time.

SPECIFIC CONDUCTIVITY OF FLOUR EXTRACTS AT 30°

Grade of Flour	Conductivity $\kappa \times 10^{-4}$	Ash, Per Cent.
First break	6.15	0.41
Second break	5.69	.34
Third break	5.78	.34
Fourth break	6.83	.91
Fifth break	9.56	1.50
First sizings	5.25	.53
Second sizings	5.49	.58
Third sizings	6.91	.71
First middlings	4.61	.38
Second middlings	4.51	.39
Third middlings	4.50	.38
Fourth middlings	5.18	.44
Fifth middlings	5.25	.53
Sixth middlings	6.11	.62
Seventh middlings	6.30	.67
First tailings	7.71	.97
Second tailings	9.18	1.27
First low grade	6.72	.79
Second low grade	7.59	.93
Third low grade	7.53	1.07
Patent	5.21	.45
Clear	7.71	.90
Red dog	14.98	2.53

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THE NORTH CAROLINA ACADEMY OF SCIENCE

THE North Carolina Academy of Science held its seventeenth annual meeting at the State Normal College, Greensboro, on Friday and Saturday, April 26 and 27, 1918. The executive committee met at 2:10 P.M. on Friday and passed on the business matters of the academy. The reading of papers was begun at 2:45 P.M. and continued until 5 P.M., when adjournment was had. At night owing to the absence of President W. A. Withers, due to serious illness in his family, the presidential address on "Gossypol" had to be omitted. How-

ever, Professor W. C. Coker gave two papers with lantern-slide illustrations—"*Azalea atlantica* and variety" and "A visit to Smith's Island." Smith's Island is situated at the mouth of the Cape Fear River and is of especial interest because it is the northern limit of various subtropical forms, particularly the palmetto palm. The academy then adjourned to another building where it was tendered a reception by the faculty of the college and the senior students in the science and home economics courses.

The academy met in annual business session at 9:10 Saturday morning. The minutes of the last meeting were read and approved, as were the reports of the Secretary-Treasurer and various committees, especially that on the teaching of science committee was continued for another year. The membership on January 1, 1917, was reported to be in the high schools of North Carolina. This latter 88. During the year 13 members were lost by resignation, removal from the state, and other causes, and ten new members were elected, bringing the membership on January 1, 1918, to 85. Five new members were elected at this meeting. An invitation from Trinity College, Durham, for the academy to be its guest at the next annual meeting was accepted.

The following officers were elected for 1918–19:

President—E. W. Gudger, State Normal College, Greensboro.

Vice-president—H. B. Arbuckle, Davidson College, Davidson.

Secretary-Treasurer—Bert Cunningham, Trinity College, Durham.

Additional Members Executive Committee—George W. Lay, St. Mary's School, Raleigh; Miss Gertrude Mendenhall, State Normal College, Greensboro; J. J. Wolfe, Trinity College, Durham.

At the close of the business meeting, President Foust, of the college, informally welcomed the academy to the college. Next a joint meeting was had of the academy and the North Carolina Section of the American Chemical Society, at which the chemical papers of general interest from the chemists' program were read. Following this, each organization went into separate session. Adjournment was had at 12:50 and the visiting scientists as guests of the college were entertained at luncheon in the college dining hall. Reconvening at 2 P.M., the reading of papers was concluded at 2:30, at which time the academy adjourned.

The effects of the war on the academy were plainly to be seen in the smaller number of papers than usual presented, and in the large number of resignations sent in or pending due to service in the army. Out of a total enrollment on January 1, 1918, of 85, 9, or over 10 per cent., are in the war, and others, particularly chemists, have gone north to engage in war work. However, there was an attendance of 24, and the meeting was a very enthusiastic and thoroughly enjoyable one. The smaller number of papers made possible the considerable discussion which followed the reading of nearly every one. The following papers were presented, numbers 4, 7, 12 and 20 of which will appear in the current issue of the *Journal* of the Elisha Mitchell Scientific Society.

The war work of American physicists: C. W. Edwards. (Read by the Secretary.)

Some important but largely neglected scientific facts: George W. Lay.

Symptoms of disease in plants: F. A. Wolfe.

The sun's eclipse, June 8, 1918: question: John F. Lanneau.

Entrance requirements in science at the State Normal College: E. W. Gudger.

Extension of the range of Prunus umbellata into North Carolina: J. S. Holmes.

Eliminations from and additions to the list of North Carolina reptiles and amphibians: C. S. Brimley. (Read by the Secretary.)

Azalea atlantica and variety: W. C. Coker.

Notes on the magnetic compass: T. F. Hickerson.

Variation within the individual sponge towards types of structure characteristic of other species and genera: H. V. Wilson.

New or interesting North Carolina fungi: H. C. Beardslee.

Herpetological fauna of North Carolina compared with that of Virginia: C. S. Brimley. (Read by the Secretary.)

Further occurrence of cross conjugation in Spirogyra: Bert Cunningham. (Lantern.)

A visit to Smith's Island: W. C. Coker. (Lantern.)

Some methods and results of a plankton investigation of Chesapeake Bay: J. J. Wolfe and Bert Cunningham. (Lantern.)

Mineral fertilizers; their mode of occurrence and distribution in North Carolina: Collier Cobb.

Notes on buds: E. W. Gudger.

Recent changes in Currituck Sound: Collier Cobb.

The return shock due to lightning: Andrew H. Patterson.

Report of investigations on the cause of death of matured chicks in shell in artificial incubation: H. B. Arbuckle.

E. W. Gudger,
Secretary