The following resolution was adopted by the academy:

I. *Whereas,* this Academy has at an earlier meeting adopted resolutions concerning the establishing of National Forest units in the State of Illinois, be it resolved that the academy assembled in Annual Meeting on May 5th, 1933, reaffirm its interest in and active support of a policy looking toward the development of forestry conservation within our state. Be it further reaffirmed that this Academy stands ready to offer its support to both State and Federal Agencies in furthering the establishment of adequate programs of forest conservation.

II. As a body of more than one thousand persons interested in science, the Illinois State Academy of Science takes this opportunity to affirm its interest in and concern for the welfare of all scientific work of the various state agencies. Be it therefore

Resolved, that this body go on record endorsing the past and projected programs of research and studies carried on by the various educational institutions, scientific surveys and other research organizations under state direction. Be it further *Resolved* that the State Legislature be urged to continue to extend adequate financial support to these organizations. Further be it *Resolved* that the Legislative Committee of this Academy be instructed to work for all matters of legislation favoring these agencies and to oppose all untoward legislation threatening the progress of education and of science in the State.

The following were chosen officers for the year 1933–34:

President: B. Smith Hopkins, chemistry, University of Illinois.

First Vice-president: Charles H. Behre, geology, Northwestern University.

Secretary: Harold R. Wanless, geology, University of Illinois.

Treasurer: George D. Fuller, botany, University of Chicago.

Editor: Dorothy E. Rose, State Geological Survey, Urbana.

It was decided to hold the twenty-seventh annual meeting of the academy at Decatur early in May, 1934. Dr. J. H. Ransom, of James Millikin University, will serve as chairman of the committee on local arrangements.

HAROLD R. WANLESS,
Secretary

THE VIRGINIA ACADEMY OF SCIENCE

THE Virginia Academy of Science held its eleventh annual meeting at the State Teachers College, Fredericksburg, Virginia, on May 5 and 6, with a registration of 320. In the section of astronomy, mathematics and physics 27 papers were presented; in biology, 37; in chemistry, 17; in geology, 15; in the medical sciences, 15; and in psychology and education, 12, making a total of 121.

The annual prize of fifty dollars was awarded to S. A. Wingard, of the Virginia Polytechnic Institute, for a paper entitled, "The Production of Rust-Resistant Varieties of Beans by Hybridization," and honorable mention was accorded to a paper by A. N. Vyssotsky and Emma T. A. Williams entitled "Color Indices and Integrated Magnitudes of Fifteen Bright Globular Clusters." These awards carry added significance this year because of the unusually high quality of the papers in competition with them.

The research committee reported that during the year the following grants in aid of scientific research had been made: Jesse W. Beams, physics, University of Virginia, $150; J. C. Forbes, biochemistry, Medical College of Virginia, $75; J. M. McGinnis, psychology, Hollins College, $40; C. C. Speidel, anatomy, University of Virginia, $100; N. Beverly Tucker, chemistry, Virginia Military Institute, $50; I. A. Updike, chemistry, Randolph-Macon College, $75.

A noteworthy item in the year's work is the increase in the number of junior (or student) members, the number having increased from 54 to 115. There were also two papers presented by junior members and two exhibits of their work were shown. One was an array of totally cleared anatomical and zoological specimens and the other was an inexpensive, laboratory-built apparatus for the fixation of atmospheric nitrogen.

Dr. William A. Kepner, of the University of Virginia, was elected president for the coming year, Dr. William T. Sanger, of the Medical College of Virginia, president elect, and Professor D. Maurice Allan, of Hampden-Sydney College, member of the council.

Following the meeting rather extensive field trips were made by the committee on the flora of Virginia and by members of the geology section.

E. C. L. MILLER,
Secretary

THE TENNESSEE ACADEMY OF SCIENCE

THE thirty-second meeting of the Tennessee Academy of Science was held at the Reelfoot Lake Biological Station of the academy on April 28 and 29. The feature of the meeting was an address by The Very Reverend I. H. Noe, dean, St. Mary's Episcopal Cathedral, Memphis, in dedication of the John T. McGill Laboratory Building. This building is named in honor of Dr. John T. McGill, professor emeritus of chemistry at Vanderbilt University and secretary-treasurer of the Tennessee Academy of Science. In thus dedicating this building recognition is given to Dr. McGill of his many years of valued work in and for the academy and particularly of his efforts which resulted in the establishment in 1931 by the state of

Tennessee of the Reelfoot Lake Biological Station under the management and control of the Tennessee Academy of Science. The John T. McGill Laboratory is a modernly equipped building containing four laboratories fitted with proper work tables, cabinets, aquaria, etc., several stock and preparation rooms, and a large assembly room. This laboratory, located on the east side of Reelfoot Lake in Obion County, lies in a region which represents well the water and land fauna and flora of the Mississippi bottom. It is a few minutes walk from the comfortable Walnut Log Lodge, where special rates are available for workers at the laboratory. It is the policy of the executive committee of the station to allot free working space in the laboratory for research work of scientific interest. Application should be made to Dr. A. R. Bliss, Jr., University of Tennessee Medical School, Memphis, Tennessee.

In addition to the dedicatory exercises, approximately thirty papers were presented during four sessions of the meeting. These interesting programs were composed of reports on research work on diversified subjects and were presented by representatives of the following institutions: The University of Tennessee, Memphis; Southwestern University; George Peabody College; Vanderbilt University; Tennessee Department of Public Health; U. S. Department of Agriculture; Lambuth College West Tennessee Teachers College; Freed-Hardeman College; University of Tennessee Junior College, Martin; State Teachers College, Murfreesboro. Numerous groups made field excursions both on the lake and into the surrounding woodlands for the collection of specimens and material from this interesting territory. These trips and the congenial atmosphere of the Walnut Log Lodge contributed not a little to the success of the meeting. The academy is indebted to Dr. A. R. Bliss, Jr., and his committee on arrangements for making possible one of the most pleasant and successful of the academy meetings.

FRANCIS G. SLACK,
President

SCIENTIFIC APPARATUS AND LABORATORY METHODS

A TELEPHONIC DROP COUNTER

THE drop counter here described operates on the mechanical contact principle, but uses a telephone transmitter as the contact mechanism in place of the conventional metal vane making contact in a pool of mercury. The small current variations of the transmitter are amplified by a powerful vacuum tube relay, which gives a large current output sufficient to operate any type of recording apparatus.

Fig. 1 represents a Western Electric telephone

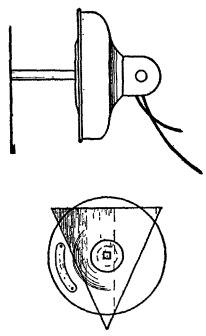

FIG. 1. Transmitter with vane attached to diaphragm.

transmitter with the rubber mouthpiece removed. A triangular vane of thin mica or celluloid, about 5×7 cm, is fastened at its center to a light celluloid spindle some 7 cm long, and the lower end of the spindle is cemented to the diaphragm of the transmitter with celluloid-acetone cement. The vane is mounted parallel to the diaphragm and about 5 cm above the top of the transmitter to allow a layer of sound-deadening cotton to be spread over the transmitter. The transmitter is laid in a boxful of cotton to prevent outside vibrations from actuating the mechanism, and the pipette is adjusted so that the drops fall on the vane.

Fig. 2 shows the electrical system used to amplify

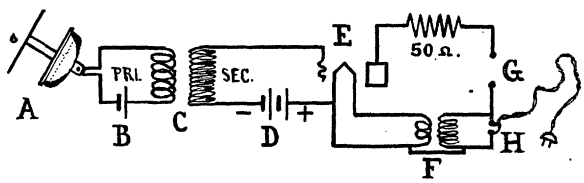

FIG. 2. The amplifying system of the apparatus.

the current variations of the transmitter. A is the transmitter, B a 1½ volt dry cell, C a microphone transformer with a 60 to 1 ratio between secondary and primary, D the bias battery of 9 volts made of two 4½ volt C-batteries in series, E is the amplifying tube, F the filament supply transformer, G the output connections and H the 110 volt supply leads.

The amplifying tube is a General Electric Thyratron FG-17, a mercury ionization vacuum tube of peculiar properties which operates on raw 110 volt alternating current and requires no B-battery. In this device the plate current does not follow the grid voltage up and down as in the ordinary amplifying tube, but no plate current at all flows until the grid voltage reaches a certain value, when the mercury vapor suddenly ionizes and an output of about 50 watts results. The tube consequently is an excellent