(5) In conclusion, may I remark that there appears to be hardly any branch of science in which it would not be helpful to plot frequency-distributions. Such graphical representations not only help to prevent erroneous judgments but, to the practised eye, convey also a wealth of information.

A. F. DUFTON

GREENBANK, GARSTON
HERTFORDSHIRE

A TEST FOR HEAVY WATER IN WATER FROM DEEP OIL WELLS

THE writer has found that the density of water associated with petroleum does not differ from that of ordinary surface water within the limits of measurement, estimated to be not more than two parts per million. The two samples examined were from oil wells slightly more than five thousand feet deep. The geological formation of the source in one case was Oligocene and in the other, Upper Eocene. In each experiment five gallons of water containing oil and water impurities were purified by fractional distillation with the usual precautions and the density of the final sample (800 ml) was determined by the float method of Richards.

The writer is indebted to Mr. George Corless, of the Humble Oil and Refining Company, and to Mr. Gordon B. Hanson, of the Petroleum Rectifying Company, for the collection of the samples.

ARTHUR F. SCOTT

SOCIETIES AND MEETINGS

THE VIRGINIA ACADEMY OF SCIENCE

THE Virginia Academy of Science held its twelfth annual meeting at the State Teachers College at Harrisonburg on May 4 and 5, with a registered attendance of 355.

At the council meeting a resolution was adopted favoring a new and more effective pure food and drugs act. At the open meeting on Friday night Dr. I. A. Updike, of Randolph-Macon College, gave a striking demonstration of the cold-light producing power of 3-aminophthalhydrazide.

The annual prize of fifty dollars was awarded to Dr. E. P. Johnson, of the Virginia Polytechnic Institute, for a paper entitled "The Etiology and Histogenesis of Leucosis and Lymphomatosis of Fowls." Three other papers were such close competitors for the prize that their authors were given honorable mention and a special certificate was issued to each. These were: Mr. Ladley Husted, of the Blandy Experimental Farm of the University of Virginia, "Cytological Studies on the Peanut, Arachis, II. Chromosome Number, Morphology and Behavior, and Their Application to the Problem of the Origin of the Cultivated Forms"; Dr. Rolland J. Main, of the Medical College of Virginia, "Diurnal Changes in Alveolar Carbon Dioxide as Effected by the Visceral Control of Respiration"; and Dr. E. G. Pickels, of the University of Virginia, "Adaptations of the Air-Driven Ultracentrifuge."

The ultracentrifuge developed at the University of Virginia was demonstrated in action and its adaptation to biological research emphasized. This centrifuge runs on and by air and the only practical limit to its speed is the ability of the steel rotor to hold together. A large number of biological exhibits and demonstrations were shown, especially such as could be used in teaching high-school science. There was also a symposium on the teaching of high-school chemistry.

The following officers were elected for the coming year:

President: Dr. William T. Sanger, of the Medical College of Virginia; *President-elect:* Professor Ida Sitler, of Hollins College; *Secretary-Treasurer:* Dr. E. C. L. Miller, of the Medical College of Virginia; *Councilor:* Dr. F. L. Robeson, of the Virginia Polytechnic Institute.

For the Section of Astronomy, Mathematics and Physics: *Chairman,* Dr. C. L. Albright, of the University of Richmond; *Secretary,* Professor Mary J. Cox, of Hollins College.

For the Section of Biology: *Chairman,* Professor Robert P. Carroll, of the Virginia Military Institute; *Sub-Chairman,* Dr. Harry G. Walker, of the Virginia Truck Experiment Station; *Secretary,* Professor George W. Chappelear, Jr., of the Harrisonburg State Teachers College.

For the Section of Chemistry: *Chairman,* Dr. John H. Yoe, of the University of Virginia; *Secretary,* Dr. Robert E. Hussey, of the Virginia Polytechnic Institute.

For the Section of Education: *Chairman,* Dr. W. J. Gifford, of the Harrisonburg State Teachers College; *Secretary,* Professor A. M. Jarman, of the University of Virginia.

For the Section of Geology: *Chairman,* Mr. William M. McGill, of the Virginia Geological Survey; *Secretary,* Dr. Marcellus H. Stow, of Washington and Lee University.

For the Section of Medical Sciences: *Chairman,* Dr. James H. Kindred, of the University of Virginia; *Secretary,* Dr. Harvey B. Haag, of the Medical College of Virginia.

For the Section of Psychology: *Chairman,* Dr. John M. McGinnis, of Hollins College; *Secretary,* Dr. R. C. Sommerville, of Lynchburg College.

The meeting next year will be held the first week in May at the University of Richmond.

Following the meeting there was a geology field trip and the usual botanical foray. About sixty botanists and lovers of nature left Harrisonburg after lunch, Saturday, went to the mountains west of there, spent the night at a Girl Scout Camp and dispersed for home Sunday afternoon. In this way the academy committee on the flora of Virginia is sweeping up various parts of the state.

E. C. L. MILLER,
Secretary

THE OHIO ACADEMY OF SCIENCE

THE forty-fourth annual meeting of the Ohio Academy of Science was held at the Ohio State University, Columbus, on Friday and Saturday, March 30 and 31, under the presidency of Dr. E. Lucy Braun, of the University of Cincinnati. The attendance was surprisingly good, the sectional programs unusually attractive, the enthusiasm refreshing and the cordiality of Ohio State University, as usual, delightful.

About 200 members and visitors sat down to the annual dinner on Friday evening, Dr. A. E. Waller, chairman of the local committee, acting as toastmaster in a very happy manner. Following the dinner, President Braun gave a most informing address on "A History of Ohio's Vegetation," illustrated with a number of excellent lantern slides.

The invitation address was given on Friday morning by Dr. Walter H. Bucher, of the Department of Geology, University of Cincinnati, on the theme "Recent Geologic Methods of Measuring Time." This address was listened to with the closest attention by a crowded house.

The eight sectional programs contained some 145 papers, many of them of outstanding interest.

The Central Ohio Physics Club, Professor G. A. Stinchcomb, of Heidelberg College, president, and Professor R. H. Howe, of Denison University, secretary, again honored the academy by meeting in joint session with the section of physics and astronomy.

Some demonstrations and exhibits of unusual interest were provided for the members of the academy, and provisions were made for a visit to the "Heavy Water" installation of the Ohio State University, also to inspect the work of the departments of agricultural chemistry, chemical engineering, chemistry, ceramics and metallurgy. The officers and staff of the Battelle Memorial Institute extended an invitation to visit the institute under guides and at the same time inspect the exhibits of the department of chemical engineering, including (a) nomographic charts in the rayon industry, (b) fineness determination of Portland cement, etc., and (c) classification of limes.

Twenty-eight new members were elected and the following members were made fellows in the Academy: Stanley Adair Cain, Wendell Holmes Camp, Arthur Glenn Chapman, Ray Clarence Friesner, Robert Benson Gordon, Lawrence Emerson Hicks, Paul Jackson Kramer, Clarence J. Leuba, Melvin Gillison Rigg, Hiram Frederick Thut and Harry Ellsworth Nold.

The following were elected to office for the ensuing year: *President,* James P. Porter; *Vice-presidents,* (A) Zoology, Robert S. McEwen; (B) Botany, O. L. Inman; (C) Geology, Willard Berry; (D) Medical Sciences, J. B. Brown; (E) Psychology, Francis N. Maxfield; (F) Physics and Astronomy, C. E. Howe; (G) Geography, G. W. Conrey; (H) Chemistry, Clyde S. Adams; *Secretary,* William H. Alexander; *Treasurer,* A. E. Waller.

WILLIAM H. ALEXANDER,
Secretary

REPORTS

APPROPRIATIONS FOR GRANTS-IN-AID BY THE NATIONAL RESEARCH COUNCIL

THE Committee on Grants-in-Aid of the National Research Council, at its meetings in May and June, out of 142 requests made sixty-six grants for the support of research projects, as follows:

Physical Sciences: Sebastian Albrecht, research associate, Dudley Observatory, "accurate stellar wave-lengths and standard radial velocities"; M. L. Pool, assistant professor of physics, Ohio State University, "disintegration of the lighter elements with low voltage bombardment and the examination of the products of the disintegration with a low pressure Wilson Cloud Chamber"; P. A. Ross, professor of physics, Stanford University, "scattered x-rays"; Charles H. Smiley, assistant professor of mathematics, Brown University, "tables of orbital coordinates for nearly-parabolic orbits"; Otto Struve, director of the Yerkes Observatory, and S. L. Boothroyd, professor of astronomy, Cornell University, "development of the technique of coating large optical surfaces with a metal by evaporation in vacuo."

Engineering: Jacob P. Den Hartog, assistant professor of applied mechanics, Harvard University, "relaxation tests in torsion on hollow tubes at high temperatures, and correlation of tests with results of 'creep' tests"; Mortimer F. Sayre, associate professor of applied mechanics, Union College, "types of tests for welding."

Chemistry: Gosta Akerlof, assistant professor of chemistry, Yale University, "measurement over a temperature range of 0° to 100° of the vapor pressure of aqueous solutions of certain strong electrolytes"; W. R. Brode, associate professor of organic chemistry, and W. L. Evans, professor of chemistry, Ohio State University, "absorption spectra of organic and inorganic compounds"; Emma P. Carr, professor of chemistry, Mount Holyoke College, "the absorption spectra of simple or-