Field, in southwestern Illinois, every one showed, on the third day after inoculation, either a black precipitate or black colonies in at least one of the five culture mediae used. By the tenth day, five out of the six waters showed results with three or more mediae, many of the solid mediae being nearly or completely converted into a dense black mass of coalescing colonies.

Conclusions. No evidence has, to our knowledge, been adduced as yet for the reduction of sulphates with the formation of sulphides through the agency of *dead organic* matter at ordinary temperatures. At high temperatures such reductions do take place. Reduction of sulphates with the development of hydrogen sulphide or other sulphides has long been known to take place in the slimes of the sea-bottom through the agency of anaerobic bacteria and also in sewerage and about the orifices of certain springs.

From the work here reported it is evident that anaerobic bacteria of the sulphate-reducing type are present in abundance in some of the waters associated with oil in productive fields and it is very probable that they are largely responsible for the low sulphate content of these waters. The hydrogen sulphide so abundantly associated with most of the waters tested is probably in part at least a product of bacterial reduction of sulphates. It probably influences in important measure the quality of the oil since it constitutes a potential source of sulphur.

Bacteria other than the sulphate-reducing type are present in some of the waters, but their nature and functions have not been studied.

The oil-field waters in which the sulphate-reducing bacteria occur are similar in general composition to sea-water, and by some geologists are regarded as ancient sea waters buried within the rocks when the latter were laid down on the sea bottom. It would seem probable that any waters entombed in the rocks as long ago as Pennsylvanian times must have undergone repeated changes in concentration and at least minor changes in composition by contact with other waters and with the rocks. Whether the bacteria found in these waters to-day are lineal descendants of forms living on the sea-bottom at the time the sediments were laid down or have been introduced later by ground waters descending from the surface to the oil-bearing horizons is an interesting question that it may never be possible to answer.

EDSON S. BASTIN

With the cooperation of

FRANK E. GREER
C. A. MERRITT
GAIL MOULTON

THE UNIVERSITY OF CHICAGO

TENNESSEE ACADEMY OF SCIENCE

THE fourteenth annual meeting of the Tennessee Academy of Science was held at Vanderbilt University, Nashville, on November 27.

The report of the secretary showed a large increase in membership. The academy took the necessary steps to apply for affiliation with the American Association for the Advancement of Science.

Officers elected for the ensuing year: *President,* A. F. Ganier, Nashville; *vice-president,* C. A. Mooers, University of Tennessee, Knoxville; *editor,* G. R. Mayfield, Vanderbilt University, Nashville; *secretary-treasurer,* J. T. McGill, Vanderbilt University.

The program of papers was as follows: Chemistry in Its Every-day Uses, J. M. Breckenridge; A Theory of the Source of the Sun's Heat, Beecher Moore; Sanitary Conditions in Tennessee, with Special Reference to Water Supplies, Howard R. Fullerton; Reasons for Belief in the Theory of Evolution, L. C. Glenn; annual address of the president, Possibilities for a Biological Station at Reelfoot Lake, Scott C. Lyon; Observations of the Lunar Crater Eratofphenes, Latimer J. Wilson; Practice Effects on Serial Responses and their Physical Bases, Joseph Peterson; Facts which Support the Electron Theory of the Structure of Matter, Louis J. Bircher; The Great Smoky Mountain National Park Project, Henry E. Colton; The Rainbow Natural Bridge, Utah, Hugh D. Miser; A New Method of Determining Water Pollution, William Litterer.

The following resolution was passed unanimously:

RESOLVED, That the Tennessee Academy of Science, having as its principal objects scientific research and the diffusion of knowledge concerning the various departments of science, is directly interested in the teaching of science in the public schools and colleges of Tennessee, and this society deplores and regards as contrary to the basic principles of freedom and the best interests of citizenship, any attempt to hamper by statute the pursuit of truth and the discovery and teaching of the facts of nature. We therefore desire to record our belief that the Act of the Tennessee Legislature (House Bill No. 185, approved by the governor March 21, 1925) is in effect an unfortunate limitation of the intellectual freedom of teachers of science in our public schools; that it marks a backward step in our educational program; that it takes away important privileges of study and instruction heretofore available to students, especially those in our higher institutions. In justice to our people and for the welfare of the state, the Tennessee Academy of Science hereby earnestly recommends the repeal of the act above mentioned at the next session of the State Legislature.

ROSCOE NUNN,
Secretary-Treasurer