an elaborate series of measurements on the electromotive forces produced by the acceleration of electrolytes, varying the nature of the solutions used, the magnitude of the acceleration, and the distance between the front and rear electrodes, and is now preparing for publication a description of the work. The experiments were performed, however, primarily as a preliminary to similar work with metals in order to test the quantitative theory as to the magnitude of the effect which would be much larger in electrolytes than in metals, and in order to determine the most suitable form of apparatus for the work. Mr. Osgerby and the writer did, however, carry out some experiments with metallic conductors, but at the time were unable to detect any effect, as further modification of the apparatus is necessary before it will be sensitive enough for metals.

In a recent number of SCIENCE (November 1, 1912) the writer was surprised to observe that Professor Daniel E. Comstock, of the Massachusetts Institute of Technology, has not only apparently attempted to reserve this field of experimental investigation, but to put forward as a new discovery the probability that such electromotive forces would be produced by the acceleration of metallic conductors. The possibility of such electromotive forces has certainly been recognized since the time of Maxwell. In *electrolytic* conductors their actual presence has been shown by the experiments of Colley, and the similar electromotive forces which arise from the action of centrifugal force on electrolytic conductors were demonstrated by Des Coudres[3] and have been thoroughly investigated by the present writer.[4] In another, to obtain effects dependent on the *metallic conductors* Maxwell,[5] Lodge,[6] and Nichols[7] have all attempted, by one method or another, to obtain effects dependent on the "mechanical momentum" accompanying the passage of electricity, but have failed, owing to the lack of sensitiveness of their apparatus. That the conception of "free electrons" necessarily includes the production of an electromotive force in accelerated metals is certainly the common knowledge of physicists who are familiar with the work of the above investigators.

The writer has no desire to reserve a field which is the property of all physicists, but at the present time wishes to report that his experiments are sufficient to show, as would be expected, that the electromotive force produced in accelerated metals is certainly much smaller than that produced in accelerated electrolytes, and to state that the apparatus is now being improved with the hope of detecting the effect in metals.

RICHARD C. TOLMAN
UNIVERSITY OF CALIFORNIA,
November 9, 1912

[3] Des Coudres, *Wied. Ann.*, 49, p. 284, 1893; *ibid.*, 57, p. 232, 1896.

[4] Tolman, *Proc. Amer. Acad.*, 46, p. 109, 1910; *J. Amer. Chem. Soc.*, 33, p. 121, 1911.

[5] Maxwell, *loc. cit.*

[6] Lodge, "Modern Views of Electricity," 3d edition (1907), p. 89.

[7] Nichols, *Physik. Z.*, 7, p. 640, 1906.

THE AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

THE fourth annual meeting of the society was held in Cleveland on December 30 and 31. There were two executive and three scientific sessions.

The most important outcome of the Cleveland meeting, as far as the Pharmacological, Physiological and Biochemical Societies are concerned, was the formation of a federation designed to knit these societies more closely together, while yet jealously preserving the individuality of each component. The meeting of delegates with full power to act from each of the three societies, took place during the last informal dinner and smoker at the Colonial Hotel on December 31. The delegates from the Physiological Society were Drs. Meltzer, Lee and Cannon; from the Biochemical Society, Drs. Lusk and Wells; from the Pharmacological Society, Drs. Sollmann, Loevenhart and Auer.

Dr. Meltzer was elected temporary chairman and Dr. Cannon temporary secretary. The outcome of the proceedings of this conference committee will be best shown by a transcript of its minutes:

"The following motions were voted unanimously:

"That a federation of the three societies be hereby established.

"That the presidents and the secretaries of the constituent societies form the executive committee of the federation.

"That the chairmanship of the executive committee be held in turn by the presidents of the constituent societies who shall succeed one another annually in the order of seniority of the societies (physiological, biochemical and pharmacological).

"That the secretary of the executive committee shall be secretary of the society whose president is chairman.

"That the secretaries of the three societies shall consult in preparing the programs of the annual meeting, and that, as far as practicable, and with the author's consent, papers be so distributed as to be read to the society in which they properly belong.

"That the programs of the three societies be published by the secretary of the federation under one cover and that the expense of publication be shared *pro rata* by the societies according to the number of members.

"That the official title of the new organization be 'The Federation of American Societies for Experimental Biology' (comprising the American Physiological Society, the American Society of Biological Chemists, and the American Society for Pharmacology and Experimental Therapeutics).

"That a common meeting place of the federation with the Anatomists, Zoologists and Naturalists is desirable but not mandatory.

"That in the name of the federation, the International Physiological Congress be invited to meet in the United States in 1916.

"That the present conference committee delegate all its powers to the executive committee of the federation.

"The meeting then adjourned."

The first meeting of the new federation will be held next December in Philadelphia.

The scientific program was as follows:

FIRST SESSION

Monday, December 30, 9:00 to 12:00 M.

Wm. Salant: "The Influence of Temperature on the Toxicity of Caffein." Read by title.

Wm. Salant: "Further Observation on the Influence of Caffein on the Circulation." Read by title.

S. P. Beebe and Eleanor Van Alstyne: "The Effect of High Protein Diet on the Growth of Transplantable Tumors of the White Rat."

Lafayette B. Mendel and R. L. Kahn: "The Physiological Action of some Methyl Purines."

J. A. Eyster and W. J. Meek: "The Action of Certain Drugs on the Electrocardiogram."

Paul J. Hanzlik (by invitation): "The Intestinal Absorption of Alcohol."

Paul J. Hanzlik (by invitation): "The 'Toxic Dose' of Salicylates according to Clinical Statistics."

W. H. Brown and A. S. Loevenhart: "The Effect of Hematin upon the Circulation and Respiration."

Wm. De B. MacNider: "The Effect of Anesthetics on the Output of Urine in Uranium Nephritis."

George B. Roth: "The Physiological Assay of Aconitin."

SECOND SESSION

Monday, December 30, 2:00 P.M.

L. G. Rowntree and R. Fitz: "Renal Function in Experimental Passive Congestion."

R. Fitz and L. G. Rowntree: "The Effect of Temporary Occlusion of Renal Circulation on Renal Function."

Wm. W. Ford: "Observations on Three Poisonous Fungi not Previously Described."

J. D. Pilcher: "The Protective Action of Lipoids against Hemolysis."

Henry G. Barbour (by invitation): "The Action of Histamin upon Surviving Arteries."

George W. Crile and J. B. Austin: "Nitrous Oxide Sleep compared with Normal Sleep—Brain Cell Studies."

Wm. T. Porter and J. H. Pratt: "The Action of Diphtheria Toxin on the Vasomotor Center."

Hideyo Noguchi and J. Bronfenbrenner: "The Effects of certain Disinfectants and Therapeutic Preparations upon the Cultivated Spirochætes." Read by title.

Frank M. Surface (by invitation): "The Effect of Surplus Cow Serum on Complement Fixation with Infectious Abortion."

I. Adler and C. L. Alsberg: "Studies upon the Long-continued Administration of Adrenalin and Nicotin." Read by title.

C. L. Alsberg: "The Hemolytic Power of Various Plants." Read by title.

THIRD SESSION

Tuesday, December 31, 9:00 to 12:00 M.

Yandell Henderson: "Demonstration of a Carbonator for Quantitative Carbon-dioxide Therapy." Read by title.

Paul Lewis: "Further Observations on the Relations of Vital Stains to the Tubercle."

T. S. Githens and S. J. Meltzer: "On the Course of the Toxic Effects of Ether and Chloroform under Intratracheal Insufflation."

T. S. Githens: "On the Influence of Decerebration upon Morphin Tetanus in Frogs."

I. S. Kleiner (by invitation): "On the Effect of Sodium Bicarbonate and Sodium Chloride upon the Convulsions produced by Heroin and Strychnin."

J. Auer and S. J. Meltzer: "The Influence of Pituitrin upon the Depressor Action of the Vagus Nerve in Cats."

B. T. Terry: "The Influence of Heat upon the Toxicity for Trypanosomes of Blood containing Transformed Atoxyl."

B. T. Terry: "Variations in the Toxicity of Transformed Atoxyl for Trypanosomes caused by Altering the Number of Organisms."

EXECUTIVE SESSIONS

The following officers were elected for the year 1913:

President—Torald Sollmann.

Secretary—John Auer.

Treasurer—A. S. Loevenhart.

New Members of the Council—J. J. Abel, Wm. de B. MacNider.

Membership Committee—C. W. Edmunds was reelected to serve three years, and the place made vacant by Dr. Sollmann's election to the presidency was filled by the election of Reid Hunt.

New Members—Among the candidates for membership investigated by the membership committee, the following were favorably reported to the council, recommended for election, and elected by the society: Henry Gray Barbour, Yale Medical School; Clyde Brooks, University of Pittsburgh; Cary Eggleston, Cornell Medical School; P. J. Hanzlik, Western Reserve Medical School; D. E. Jackson, Washington University; I. S. Kleiner, Rockefeller Institute; Oscar H. Plant, University of Pennsylvania; A. H. Ryan, University of Pittsburgh; Frank P. Underhill, Yale Medical School.

At the last business meeting the Pharmacological Society passed a vote of thanks to the Western Reserve University for the hospitality extended and to the local committee, Drs. Macleod, Sollmann and Pearce, for its thorough arrangement of all the details which made the Cleveland meeting so pleasant.

J. AUER,
Secretary

THE TENNESSEE ACADEMY OF SCIENCE

THE second session of the first annual meeting of the Tennessee Academy of Science was held at Carnegie Library Hall, University of Tennessee, Knoxville, Tennessee, on November 29–30, 1912.

The following papers were given:

NOVEMBER 29: MORNING SESSION, 10 A.M.

"The Taste Sense in Frogs," Alice N. Porter.

"Hydrogen Peroxide as a Bleaching Agent for Entire Insects," E. C. Cotton.

"Relation of the State to its Water Power Resources," J. A. Switzer.

"The Recent Disturbance in the Northern Equatorial Belt of Jupiter" (read by Professor Porter), Latimer J. Wilson.

AFTERNOON SESSION, 2 P.M.

"The Effects of a Soy Bean Crop on a Following Cereal," Maurice Mulvania.

"The Fourth Dimension," Samuel M. Barton.

"The Occurrence of Aerial Roots on the Virginia Creeper," Samuel M. Bain.

"Micro-color Photography," Samuel M. Bain.

EVENING SESSION, 7:30 P.M.

Address by the retiring president, "Science and Progress in the South."

"The Mastodon and the Glacial Age" (illustrated), W. E. Myers.

Reception to visiting members by the faculty of the University of Tennessee.

NOVEMBER 30, 9:00 P.M.

"Defraction Phenomena Due to the Dimensions of the Source of Light," Brown Ayers.

"Studies in Feeding Habits of *Amœba*," Asa A. Schaeffer.

"The Slates of Georgia," T. Poole Maynard.

"The Importance of the Study of Meteorology in its relation to Agriculture," J. F. Voohees.

"The Breaking of the Nashville Reservoir, November 5, 1912" (illustrated), Wilbur A. Nelson.

"Types of Iron Ore Deposits in East Tennessee," C. H. Gordon.

The following officers were elected for the ensuing year:

President—Watson Selvage, University of the South, Sewanee.

Vice-president—G. A. Dyer, Vanderbilt University, Nashville.

Secretary—Wilbur A. Nelson, Tennessee Geological Survey, Nashville.