

Bureau in Explorations of the Upper Air. By Professor C. F. Marvin, U. S. Weather Bureau, Washington, D. C.

13. Experiments upon the Acetylene-Oxygen Standard of Light. By Dr. Clayton H. Sharp, Cornell Univ., Ithaca, N. Y.

14. Arc Spectra. By Professor Arthur L. Foley, Univ. of Indiana, Bloomington, Indiana.

15. On the Brightness of Pigmented Surfaces under Various Sources of Illumination. By Professor Frank P. Whitman, Adelbert College, Cleveland, Ohio.

16. Note on the Construction of a Sensitive Radiometer. By Professor Ernest Fox Nichols, Colgate Univ., Hamilton, N. Y.

17. Photographs of Manometric Flames. By Dr. Edward L. Nichols, Cornell Univ., Ithaca, N. Y., and Professor Ernest Merritt, Ithaca, N. Y.

18. The Discharge of Electrified Bodies by X-rays. By Dr. C. D. Child, Cornell Univ., Ithaca, N. Y.

19. A Final Determination of the Relative Lengths of the Imperial Yard of Great Britain and the Meter of the Archives. By Professor William A. Rogers, Colby Univ., Waterville, Me.

20. The Electric Conductivity of certain Specimens of sheet Glass, with reference to their Fitness for Use in Static Generators. By Professor Dayton C. Miller, Case School of Applied Science, Cleveland Ohio.

21. Graphical Treatment of Alternating Currents in Branch Circuits in case of Variable Frequency. By Professor H. T. Eddy, Minneapolis, Minn.

22. On Simple Non-Alternating Currents. By Professor Alexander Macfarlane, Lehigh University, South Bethlehem, Pa.

23. Exhibition of Instruments for determining the Frequency of an Alternating Current. By Professor George S. Moler, Ithaca, N. Y., and Dr. Frederick Bedell, Cornell University, Ithaca, N. Y.

24. The predetermination of Transformer Regulation. By Dr. F. Bedell, Cornell University, Ithaca, N. Y.; Professor R. E. Chandler, Salem, Va., and Mr. R. H. Sherwood, Jr., Brooklyn, N. Y.

25. The effect of Pressure on the Wave-

lengths of the lines of the Emission Spectra of the Elements. By Dr. W. J. Humphreys, Johns Hopkins University, Baltimore, Md.

26. A New Form of Coal Calorimeter. By Charles L. Norton, Massachusetts Institute of Technology, Boston, Mass.

27. Notes on the Recent History of Musical Pitch in the United States. By Professor Chas. R. Cross, Massachusetts Institute of Technology, Boston, Mass.

28. A New Form of Harmonic Analyzer. By Dr. Frank A. Laws, Massachusetts Institute of Technology, Boston, Mass.

29. A Comparison of Rowland's Thermometers with the Paris Hydrogen Scale, and the Corresponding Correction to his Value of the Mechanical Equivalent of Heat. By Dr. W. S. Day, Johns Hopkins University, Baltimore, Md.

30. The Determination of the Surface Tension of Water, and of Certain Aqueous Solutions, by means of the Method of Ripples. By Dr. N. Ernest Dorsey, Johns Hopkins University, Baltimore, Md.

31. The Series of International Cloud Observations made by the U. S. Weather Bureau, and their relation to Meteorological Problems. By Professor Frank H. Bigelow, U. S. Weather Bureau, Washington, D. C.

32. The Effects of Tension and Quality of the Metal upon the Changes in Length produced in Iron Wires by Magnetization. By Byron Briggs Brackett, Johns Hopkins University, Baltimore, Md.

33. Measurement of Small Gaseous Pressures. By Charles Brush.

FREDERICK BEDELL,  
*Secretary of the Section.*

CORNELL UNIVERSITY.

#### SECTION C.—CHEMISTRY.

Address of the Vice-President: Expert Testimony. By Professor W. P. Mason, Rensselaer Polytechnic Inst., Troy, N. Y.

The meetings of the Section will be held in conjunction with those of the *American Chemical Society*.

The papers of the Section will be divided into sub-heads with following committee in charge: A. B. Prescott, Organic Chemistry; W. A.

Noyes, Inorganic Chemistry; L. M. Dennis, Analytical Chemistry; H. W. Wiley, Agricultural Chemistry; Wm. McMurtrie, Industrial Chemistry.

The departments of Physical Chemistry and of Physiological Chemistry are not, as yet, filled.

*Papers Presented to Secretary, A. A. A. S.*

1. Recent Progress in Agricultural Chemistry. By Professor H. W. Wiley, Department of Agriculture, Washington, D. C.

2. Calculations of Calorimetric Equivalents of Agricultural Products from Chemical Analyses. By Professor H. W. Wiley and W. D. Bigelow, Department of Agriculture, Washington, D. C.

3. A Study of the Methods of Starch Determination in Agricultural Products. By Professor H. W. Wiley and W. H. Krug, Department of Agriculture, Washington, D. C.

4. The Action of Oxide of Manganese on Potassium Permanganate. By Chas. L. Reese, Baltimore, Md.

5. The Chemistry of Methylene. By Professor J. U. Nef, University of Chicago, Ill.

6. The Poisons of the Tuberculosis Bacillus. By Dr. E. A. de Schweinitz, Department of Agriculture, Washington, D. C.

7. The Action of Nitric Acid upon Aluminium and the Formation of Aluminium Nitrate. By Professor J. B. Stillman, Stevens Institute of Technology, Hoboken, N. J.

8. On the Action of Nitric Acid on Metals. By G. O. Higley.

9. Street Washings. By Professor L. P. Kinnicutt, Polytechnic Institute, Worcester, Mass.

10. Plastering and Mortar. By Professor L. P. Kinnicutt, Worcester, Mass.

11. Qualitative Analysis; a point in teaching that was not a full success. By Professor A. L. Green, Purdue University, Lafayette, Ind.

12. Annual Report on Indexing Chemical Literature. By Dr. H. C. Bolton, Washington, D. C.

13. On the Action of Sodium on Methylpropylketone and on Acetophenone. By Professor Paul C. Freer, University of Michigan, Ann Arbor, Mich.

14. On the Constitution of some Hydrazones. By P. C. Freer, Ann Arbor, Mich.

15. Position in the Periodic Law of the Important Elements found in Plant and Animal bodies. By Professor Harry Snyder, University of Minnesota, Minneapolis, Minn.

16. On two polymeric series of Phosphorus-Nitrogen compounds and on the Stereochemistry of Phosphorus and Nitrogen. By Dr. H. N. Stokes, United States Geological Survey, Washington, D. C.

17. The Chemical Composition of Cement Plaster. By Prof. E. H. S. Bailey, University of Kansas, Lawrence, Kan.

18. Recent Progress in Analytical Chemistry. By Professor L. M. Dennis, Cornell University, Ithaca, N. Y.

19. Alkyl Bismuth Iodides. By Professor A. B. Prescott, University of Michigan, Ann Arbor, Mich.

20. Kola tannin. By Professor A. B. Prescott, Ann Arbor, Mich.

21. A new form of Discharger for Spark Spectra of Solutions. By Professor L. M. Dennis, Cornell University, Ithaca, N. Y.

22. Recent Progress in Industrial Chemistry. By Professor Wm. McMurtrie, New York City.

23. On Solutions of Silicates of the Alkalies. By Dr. Louis Kahlenberg and A. T. Lincoln, University of Wisconsin, Madison, Wis.

*Papers Presented to the Secretary of the American Chemical Society.*

1. The Law of Solution. By Willis R. Whitney.

2. A New Thermostat. By Willis R. Whitney.

3. A Lecture Experiment illustrating the Law of Reactions of the First Order. By Willis R. Whitney.

4. Contributions to the Chemistry of Didymium. By L. M. Dennis and E. M. Chamot.

5. A Comparison of Methods for Determining Carbon Dioxide and Carbon Monoxide. By L. M. Dennis and C. G. Edgar.

6. Some New Compounds of Hydronitric Acid. By L. M. Dennis and C. H. Benedict.

7. A Preliminary Thermo-Chemical Study of Iron and Steel. By E. D. Campbell and Firman Thompson.

8. Further Study on the Influence of Heat-Treatment and Carbon upon the Solubility of Phosphorus in Steel. By E. D. Campbell and S. C. Babcock.

9. The Action of Certain Bodies on the Digestive Ferments. By Frank D. Simons.

10. The Decomposition of Heptane and Octane at High Temperatures. By A. W. Burwell.

11. Calculation of Calorimetric Values from Analytical Data. By H. W. Wiley.

12. The Chemical Composition of Cement Plaster. By E. H. S. Bailey.

13. Bacterial Products of Hog Cholera and Swine Plague. By E. A. de Schweinitz.

14. Detection of Foreign Fats in Butter and Lard. By C. B. Cochran.

15. Distillation in General. By Leon Labonde.

16. Apparatus for Photometric Determination of Lime and Sulphuric Acid. By J. I. D. Hinds.

17. The Composition of Humus. By Harry Snyder.

18. An Electrical Laboratory Stove. By M. D. Sohon.

P. C. FREER,  
*Secretary of the Section.*

UNIVERSITY OF MICHIGAN.

SECTION D.—MECHANICAL SCIENCE AND  
ENGINEERING.

Address of the Vice-President: The Ground-work of Dynamics. By Professor John Galbraith, School of Practical Science, Toronto.

1. Development of Engineering Industries by Scientific Research. By Professor W. S. Aldrich, W. Va. University, Morgantown, W. Va.

2. The Cement Laboratory as a Field for Investigation. By Professor F. P. Spalding, Cornell University, Ithaca, N. Y.

3. The Effect of Spark Losses on the Efficiency of Locomotives. By Professor W. F. M. Goss, Purdue University, Lafayette, Ind.

4. A New Apparatus for Testing Indicator Springs. By Professor M. E. Cooley, University of Michigan, Ann Arbor, Mich.

5. Flue Gas Analysis in Boiler Tests. By Professor D. S. Jacobus, Stevens Institute, Hoboken, N. J.

6. Effect of Temperature on the Strength of Steel. By Professor R. C. Carpenter, Cornell University, Ithaca, N. Y.

7. The Properties of Aluminum Alloys. By Professor R. C. Carpenter, Ithaca, N. Y.

8. Analysis of Composite, Concrete and Iron Beams. By Professor J. B. Johnson, Washington University, St. Louis, Mo.

9. Definition of Elastic Limit for Practical Purposes. By Professor J. B. Johnson, St. Louis, Mo.

10. Theories of some Planimeters without the aid of Calculus. By Professor Forest R. Jones, University of Wisconsin, Madison, Wis.

11. The Production of X-Rays by Means of the Planté Accumulator, in which voltage is chiefly concerned, the effect of current being largely eliminated (Illustrated by Stereopticon.) By Professor W. A. Rogers, Colby University, Waterville, Me.

12. A Universal Alternator for Laboratory Purposes. By Professor Henry S. Carhart, University of Michigan, Ann Arbor, Mich.

13. Calculation of the Energy Loss in Armature Cores. By Professor W. E. Goldsborough, Purdue University, Lafayette, Ind.

14. A New Formula for Determining the Width of Leather Belting. By Professor John J. Flather, Purdue University, Lafayette, Ind.

15. A Graphical Solution of Belting Problems. By Professor John J. Flather, Lafayette, Ind.

16. On Engineering Conditions connected with the Mounting of Instruments used on Eclipse Expeditions. By Professor David P. Todd, Amherst College, Amherst, Mass.

JOHN J. FLATHER  
*Secretary of the Section.*

PURDUE UNIVERSITY.

SECTION E.—GEOLOGY AND GEOGRAPHY.

Address of the Vice President: The Pittsburg Coal Bed. By Professor I. C. White, University of West Virginia, Morgantown, West Va.

1. Stylolites. By Professor T. C. Hopkins, State College, Centre Co., Pa.

2. A Suggestion in Regard to the Theory of Volcanoes. By Professor William North Rice, Wesleyan Univ., Middletown, Ct.

# Science

## SECTION C.—CHEMISTRY

P. C. FREER

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