

apart? But what reasons are there for this short distance? Until I know the reasons, I simply do not believe it. Science does not consist of such dogmatic statements, but seeks to understand how and why things happen.

"(3) Lincoln Barnett says, 'Some theorists think that its substance was cold and wet, like snow.' This seems to refer to me, but if so, it is a complete misrepresentation of my ideas. I discussed a cold stage in the formation of the earth, but placed the temperature at which the earth accumulated at perhaps 1650° F.

"There are other points which I might criticize, but

most of all it seems to me that *Life* should use in stories of this kind the results of scientific workers who have been willing to put their ideas and conclusions into serious scientific publications under their own names, so that they can be criticized by other scientists. Such ideas are more reliable in general than those which have not been so presented and criticized."

HAROLD C. UREY

*Institute for Nuclear Studies
University of Chicago*

Reference

1. SLICHTER, L. B. *Proc. Natl. Acad. Sci. U. S.*, **36**, 511 (1950).



Association Affairs

Gordon Research Conferences June 15–September 4, 1953

W. George Parks

University of Rhode Island, Kingston

THE Gordon Research Conferences, sponsored by the AAAS, for 1953, will be held from June 15 to September 4 at the Colby Junior College, New London, N. H., and the New Hampton School, New Hampton, N. H.

The conferences were established to stimulate research in universities, research foundations, and industrial laboratories. This purpose is achieved by an informal type of meeting consisting of scheduled lectures and discussion groups. Sufficient time is available to stimulate informal discussions among the members of the conferences. Meetings are held in the morning and in the evening, Monday through Friday, with the exception of Friday evening. The afternoons are available for recreation, reading, resting, or participation in discussion groups as the individual desires. This type of meeting is a valuable means of disseminating information and ideas that otherwise would not be developed through the normal channels of publication and scientific meetings. In addition, scientists in related fields become acquainted, and valuable associations, which have resulted in collaboration and cooperative efforts between different laboratories, have thus been created.

It is hoped that each conference will extend the frontiers of science by fostering a free and informal exchange of ideas among persons actively interested in the subjects under discussion. The purpose of the program is not to review the known fields of chemistry, but primarily to bring experts up to date as to the latest developments, analyze the significance of these developments, and to provoke suggestions as to the underlying theories and profitable methods of approach for making new progress. In order to protect

individual rights and to promote discussion, it is an established requirement of each conference that all information presented is not to be used without specific authorization of the individual making the contribution, whether in formal presentation or in discussion. Scientific publications are not prepared as emanating from the conferences.

REGISTRATION AND RESERVATIONS

Each applicant must state the institution or company with which he is associated and the type of work in which he is most interested. Attendance at each conference is limited to 100.

The director will submit the names of those requesting attendance to the Conference Committee for each conference. This committee will review the names and select the members in an effort to distribute the requests as widely as possible among the various institutions and laboratories represented. The names selected will be returned by the Conference Committee to the director, who will notify those accepted as soon as possible. A registration card will be mailed with the notice of selection. Advance registration by mail for each conference is required. On receipt of the completed registration card and a deposit of \$25.00 made payable to the Gordon Research Conferences, AAAS, registration will be completed. The deposit of \$25.00 will cover the registration fee of \$15.00 (except for academic individuals and students on personal expense who may apply for a reduction of \$5.00), and the balance will be credited against subsistence expenses at the conference. The room rates are as follows: \$2.50 per night per person in a double room with single beds; \$3.00 per night per person in a single room; \$3.50 per night per person in a single or double room with private bath (the number of rooms available with bath is limited; assignments are made in the order that applications are received). Meals served in the dining room are at the rate of \$6.50 per day per person. Gratuities are provided for by an

additional charge of ten per cent, which is added to each bill. Members attending a conference are expected to live at the conference. If special circumstances warrant living elsewhere, a special registration fee of \$25.00 is charged. This special fee has been established by the Management Committee so that all individuals will assume their proper share of the expenses of the conference. The daily service charge used in previous years has been discontinued.

A special fund is put at the disposal of the chairman of each conference by the Management Committee to assist scientists from academic and government institutions who cannot attend or participate because of financial limitations. This fund is provided with the object of increasing the participation of research workers of academic and government laboratories; it is limited to scientists and graduate students who have been invited by the chairman to attend a conference in order to present a paper, or because it is expected that they will make significant contributions during their stay at the conference.

It is the responsibility of each chairman and the director of the conferences to use this fund effectively in meeting the individual needs of the academic and government participants. It may be used to contribute toward traveling expenses and/or subsistence expenses. The money is to be used as an assistance fund only. Total travel and subsistence expenses normally will not be available.

A limited number of special grants is available in the amount of \$200.00 each, or as much of this amount as is required, to assist qualified graduate students and postdoctoral fellows to attend a Gordon Research Conference. The selection of these students and fellows will be based on the recommendations of their professors, by a committee consisting of the chairman of the conference to be attended, the chairman of the Management Committee and the director of the conferences.

If it is necessary to cancel a reservation, the notice must be received in the office of the director three weeks prior to the conference. If such notice is received three weeks in advance of the conference, \$20.00 will be refunded from the \$25.00 deposit. No refund will be made for cancellations received within the three-week period.

The first meeting of each conference is held Monday at 9:00 A.M. EDT. The morning sessions, through Friday, are scheduled from 9:00 A.M. to 12:00 noon. The second session of each day is held in the evening from 7:30 to 10:00 P.M., Monday through Thursday. There are no Friday evening meetings. Conference members are expected to release their rooms not later than Sunday morning unless they have made a reservation for the next conference.

Public lectures, sponsored jointly by the college and the Gordon Research Conferences, will be given on Sunday evenings preceding the several conferences. Conference members usually arrive on the Sunday afternoon preceding the conference because it is not

possible to obtain public transportation Monday morning in time to arrive for the opening meeting. The schedule of these lectures has not been completed.

Accommodations are available for a limited number of women to attend each conference, also for wives who wish to accompany their husbands. All such requests should be made at the time of the request for attendance, because the limited accommodations will be assigned in the order that specific requests are received. Children under twelve years of age cannot be accommodated. Rooms are available at several inns and hotels in both New London and New Hampton, if reservations are made in advance. Information on these inns and hotels will be supplied by the director on request. No dogs or other animals will be permitted in the dormitories.

Requests for attendance at the conferences or for any additional information should be addressed to W. George Parks, Director, Department of Chemistry, University of Rhode Island, Kingston, R. I. From June 12 to September 4, 1953, mail should be addressed to Colby Junior College, New London, N. H.

Program at Colby Junior College

PETROLEUM

A. H. Batchelder, *Chairman*; W. J. Coppoc, *Vice Chairman*

June 15: Combustion Symposium: G. H. Denison, *Chairman*; B. M. Sturgis, "Reactions of Hydrocarbons in Engines"; W. F. Anzilotti, "The Combustion of Hydrogen as Related to Knock." C. L. Brown, *Chairman*; E. B. Rifkin, A. Ross, "Engine Combustion as It Is Influenced by Tetraethyllead"; E. C. Hughes, "Some Effects of V. I. Improvers on Engines."

June 16: L. H. Flett, *Chairman*; F. D. Rossini, B. J. Mair, "Composition of the Lubricating Oil Fraction of the Ponca, Okla., Petroleum of the API Research Project 6." E. C. Hughes, *Chairman*; M. J. O'Neal, "Application of High Molecular Weight Mass Spectrometry to Oil Constitution."

June 17: W. J. Coppoc, *Chairman*; S. S. Kurtz, Jr., C. C. Martin, "Composition of Viscous Fraction of Petroleum as Revealed by Physical Property Correlations and Hydrocarbon Type Analysis." R. G. Capell, *Chairman*; R. G. Capell, F. S. Charlton, W. S. McClenahan, G. G. Rumberger, "Composition and Properties of Petroleum Waxes."

June 18: D. R. Stevens, *Chairman*; R. W. Schiessler, "Correlation of Properties of Pure High Molecular Weight Hydrocarbons." J. Turkevich, *Chairman*; H. Eyring, R. J. Moore, "Structure of the Liquid State and Viscosity of Hydrocarbons."

June 19: L. L. Withrow, *Chairman*; E. C. Knowles, F. C. Toettcher, R. E. Berry, "Stability of Lubricating Oil Fractions"; H. C. Brown, "Friedel-Crafts Catalysts and Complexes—An Interpretation of Friedel-Crafts Alkylation Reactions."

CATALYSIS

P. W. Selwood, *Chairman*; G. A. Mills, *Vice Chairman*

June 22: Ahlborn Wheeler, "Diffusional Processes in Heterogeneous Catalysis"; R. H. Wilhelm, "Diffusion Measurements in Particulate Systems"; N. R. Amundson, "Mathematical Problems in Reactor Design."

June 23: J. W. Mitchell, "Semi-conductivity, Adsorption, and Catalysis"; P. B. Weisz, "Electronic Phenomena in Chemisorption and Catalysis."

June 24: L. R. Maxwell, "Electronic Magnetic Resonance and Its Application to Solid Solutions"; J. A. Becker, "Chemisorption of Oxygen and Hydrogen on Tungsten as Observed in the Field Emission Electron Microscope."

June 25: A. T. Gwathmey, "The Influence of Small Amounts of Foreign Atoms on the Catalytic Properties of Metallic Single Crystals"; H. E. Farnsworth, "Measurements of Gas Adsorption on Single Crystals Using the Method of Low Speed Electron Diffraction"; Rufus Lumry, "Biological Catalysis."

June 26: Milton Orchin and Irving Wender, "The Role of Cobalt Carbonyls in Homogeneous Catalysis."

SEPARATION AND PURIFICATION

Charles B. Willingham, *Chairman*; A. Letcher Jones, *Vice Chairman*

June 29: George V. Downing, "Theoretical and Methodological Criteria of Chemical Purity"; Kenneth C. D. Hickman, "Mechanism of Evaporation of Liquids."

June 30: A. Letcher Jones, "Thermal Diffusion Separation of Organic Liquid Mixtures"; Carl S. Carlson, "Extractive and Azeotropic Distillation—Newer Developments and Unsolved Problems in These Fields."

July 1: Clyde Berg, "Hypersorption—Newest Unit Operation for the Separation of Gases"; Henry A. Kunkel, "Zone Electrophoresis"; Alsoph H. Corwin, "Separation and Purification of Minute Quantities of Material."

July 2: Robert S. Tipson, "Purification by Recrystallization"; Augustus R. Glasgow, Jr., "Purification by Crystallization and Fractional Remelting"; Robert V. Kleinschmitt, "Demineralization of Sea Water."

July 3: Daniel Swern, "Inclusion Complexes—Preparation, Properties, and Uses."

POLYMERS

Arthur V. Tobolsky, *Chairman*; W. H. Stockmayer, *Vice Chairman*

July 6: H. Mark, "Inorganic Polymers"; F. R. Eirich, "Polyvinyl Pyrrolidone"; F. S. Dainton, "Reversal of Polymerization."

July 7: G. W. King, "Configuration of Polymer Chains"; W. Kauzmann, "Configurational Changes During Protein Denaturation"; P. D. Bartlett, "Inhibitors, Retarders and Chain Transfer Agents in Vinyl Polymerization."

July 8: W. M. Thomas and J. J. Pellon, "Mechanism of Acrylonitrile Polymerization"; R. S. Boyer, "Internal Brownian Motion of Polymer Chains"; G. P. Schmitt, "Continuous Processes and Phenol Formaldehyde Resinification."

July 9: F. O. Schmitt, J. Gross, and J. H. Highberger, "Collagen"; L. Mandelkern, "Rates of Crystallization"; C. G. Overberger, "Some Aspects of Ionic Polymerization."

July 10: M. J. Roedel, F. W. Billmeyer, and C. A. Sperati, "Branching in Polythene."

TEXTILES

George S. Buck, *Chairman*

July 13: John A. Howsmon, "The Evaluation of the

Submicroscopic Structure of Fibers"; Leon Segal, "Decrystallization of Cotton Cellulose."

July 14: R. J. Andres, "Pressure Dyeing of Man-Made Fibers"; Subject and speaker to be announced.

July 15: Pauline Beery Mack, "Recent Developments in the Science of Textile Maintenance"; Herman Bogaty, "Chemical, Physical, and Physiological Characteristics of Blended Fabrics."

July 16: Myron J. Coplon, "Influence of Temperature on Certain Tensile Properties of Various Textile Fibers"; Speaker to be announced, "Chemistry of Polymerization of Acrylics."

July 17: D. J. Montgomery, "Generation and Conduction of Electricity in Fibrous Materials."

CORROSION

H. P. Godard, *Chairman*; A. Wachter, *Vice Chairman*
A Critical Review of Modern Fundamental Concepts in Corrosion

July 20: Thermodynamics in Corrosion. Electrochemical Theory of Corrosion.

July 21: Chemical Kinetics in Corrosion. High Temperature Oxidation.

July 22: Reaction Mechanisms: Intergranular Corrosion, Stress Corrosion, Pitting Corrosion, Fretting Corrosion.

July 23: Reaction Mechanisms: Corrosion Fatigue Thermogalvanic Corrosion. Corrosion in Fused Salts and Molten Metals.

July 24: Corrosion in Non-Electrolytes.

INSTRUMENTATION

W. A. Wildhack, *Chairman*; R. H. Munch, *Vice Chairman*

July 27-31: James G. Baker, "The Operational Difficulties of Large Telescopes, and Future Trends Toward Giant Telescopes." Albert F. Sperry, *Chairman*; Panel Discussion: The Automatic Plant. John Trimmer, "The Basis for a Science of Instrumentology"; Harold W. Crouch, "Recent Advances in Photography and Their Applications in Science and Instrumentation"; Dudley Williams, "Nuclear Resonance Spectroscopy"; Marcus O'Day, "Remote Geophysical Measurements of the Upper Atmosphere"; Edward B. Cooper, "New Materials of Interest to Instrument Designers"; Reverend Daniel Linehan, S.J., "Recent Advances in Geophysical Instrumentation."

ELASTOMERS

Maurice Morton, *Chairman*; John Rehner, Jr., *Vice Chairman*

August 3: Silicone Rubber and Its Reinforcement: E. G. Rochow, "Valence Structure of Organosilicon Polymers"; F. M. Lewis, "Nature and Properties of Silicone High Polymers"; E. L. Warrick, "Filler Phenomena in Silicone Rubber."

August 4: Mechanism of Reinforcement: A. M. Bueche, "Reinforcement of Silicone Elastomers"; B. L. Stearns, "Carbon Black Surface Activity and Reinforcement." Free Radicals: M. Szwarc, "Effect of Chemical Constitution on Bond Dissociation Energy."

August 5: Free Radicals: R. Simha, "Kinetics of Free Radical Depolymerization"; J. Crabtree, "Cracking of Rubber by Free Radicals." Oxidative Degradation: S.

Baxter, "Mechanism of Oxidative Degradation of Rubber."

August 6: Oxidative Degradation: J. E. Field, "Infrared Study of Oxidation of Polymers"; J. O. Harris, "Ozone Protective Agents." Mechanical Degradation: R. Schallamach, "Abrasion Studies on Rubber"; R. Schallamach, "Tearing of Rubber."

August 7: M. A. Smook, "'Hypalon' S-2 Chlorosulfonated Polyethylene."

FOOD AND NUTRITION

B. F. Chow, *Chairman*; H. W. Howard, *Vice Chairman*

August 10: Anthony A. Albanese, *Chairman*; Biological Utilization of Isomers: Daniel Melnick, "Fatty Acids"; Robert C. Hockett, "Carbohydrates"; Anthony A. Albanese, "Amino Acids"; Federico Gomez, "Nutritional Problems in Mexico." H. J. Deuel, Jr., *Chairman*; Essential Fatty Acids: H. J. Deuel, Jr., "The Relative Biopotency of Different Essential Fatty Acids"; Ralph T. Holman, "Chemistry and Metabolism of Essential Fatty Acids"; Raymond Reiser, "The Intermediary Metabolism of Polyunsaturated Fatty Acids"; Arild E. Hansen, "Essential Fatty Acids in Relation to the Condition of the Skin."

August 11: W. D. McElroy, *Chairman*; Trace Elements in Nutrition: W. D. McElroy, General Introductory Remarks; C. L. Comar, "The Role and Requirement of Trace Elements in Animal Nutrition"; D. J. D. Nicholas, "Soil-Plant Relationships in Trace Element Nutrition"; Alvin Nason, "The Catalytic Function of Trace Elements in Enzyme Systems of Plants and Animals." Harry Spector, *Chairman*; Emergency Feeding; Military Survival Feeding: David Schwimmer, "Protein Metabolism at Low Caloric and Water Intakes"; Austin F. Henschel, "Climatic Factors in Survival Physiology." Civilian Disaster Feeding: John J. Hurley, "National Civil Defense Program"; Herbert Pollack, "Regional: City and State Program."

August 12: Charles Rosenblum, *Chairman*; Tracer Techniques in the Food and Pharmaceutical Industries: Charles Rosenblum, Introductory Remarks; Anthony J. Glazko, "Pharmaceutical Applications of Isotopes"; F. E. Kelsey, "Pharmacological Testing with Isotopically Labeled Drugs"; R. R. Baldwin, "Isotope Tracers in Food Processing"; R. S. Harris, "Use of Isotopes in Nutritional Biochemistry Research."

August 13: Robert S. Goodhart, *Chairman*; Vitamin B₁₂: F. H. Bethell, "The Absorption of Vitamin B₁₂ and the Nature of the Intrinsic Factor"; R. Engel, "The Relation of Vitamin B₁₂ to Methylating Substances with Comments on Vitamin B₁₂ and Hepatic Disturbances"; J. Meites, "Some Comments on Vitamin B₁₂ and Endocrine Function"; R. W. Vilter, "Some Metabolic Roles of Vitamin B₁₂ with Emphasis on Factors Affecting Utilization"; C. C. Ungley, "Clinical Investigations on Crystalline Vitamin B₁₂"; Robert Funaro, "Observations on Vitamin B₁₂ as a Growth Factor in Children on Diets Low in Animal Protein"; W. F. Alexander, "Vitamin B₁₂ and the Metabolism of Nerve Tissue"; J. R. Couch, "Vitamin B₁₂ Deficiency and Congenital Abnormalities."

August 14: H. W. Howard, *Chairman*; Food Sterilization: Samuel A. Goldblith and Bernard E. Proctor, "The Mode of Action of Sterilization by Heat, Chemical and Physical Means"; Lloyd A. Hall, "Epoxide Sterilization for Commercial Use"; Charles R. Phillips and Saul Kaye, "Chemical Sterilization of Rations."

MEDICINAL CHEMISTRY

Jackson P. English, *Chairman*; K. J. Brunings, *Vice Chairman*

August 17: Virus Diseases: Salvador E. Luria "Virus Production as a Cytochemical Problem"; J. L. Melnick, "In Vitro Cultivation of Animal Viruses." Anemia and Vitamin B₁₂: Karl Folkers, "Chemistry and Structure of Vitamin B₁₂"; C. C. Ungley, "Chemotherapeutic Action of Vitamin B₁₂."

August 18: Drug Action: Bernard Brodie, "Factors Determining Drug Distribution." Mechanisms Involved in the Metabolism of Drugs: Sidney Udenfriend, "Hydroxylation Mechanisms"; Bert LaDu, "Dealkylation Mechanisms"; Julius Axelrod, "Species Differences in Drug Metabolism"; James Shannon, "The Study of Drugs in the Human Subject."

August 19: James A. Bain, "Biological Mechanisms of the Action of Drugs on Tissue Cells"; George H. Hitchings, "A Biochemical Approach to Chemotherapy." Anti-inflammatory Agents: Edward Lowman, "Introduction to Collagen Diseases"; Robert Domenjoz, "Pharmacological Evaluation of Anti-inflammatory Agents—Pharmacology of Butazolidine"; Edward Lowman, "Clinical Evaluation of Anti-inflammatory Agents."

August 20: Anticoagulants: Walter H. Seegers, "Chemistry of Blood Coagulation"; John J. Denton, "Chemistry and History of Anticoagulants"; Charles Brambel, "Pharmacological and Clinical Studies on Anticoagulants"; C. B. Anfinsen, "Anticoagulants in Arteriosclerosis."

August 21: Narcotics and Narcotic Antagonists: Karl Pfister, "Chemistry"; Charles Winter, "Pharmacology."

VITAMINS AND METABOLISM

B. Connor Johnson, *Chairman*; Grace A. Goldsmith, *Vice Chairman*

August 24: H. E. Sauberlich, "Functions of the Citrovorum Factor"; Marian E. Swendsen, "Conversion of Folic Acid to a Citrovorum Factor by Hemopoietic Tissue"; Ulrich Weiss, "Intermediates in Aromatic Biosynthesis." Discussion, Charles Gilvarg: Nathan H. Sloane, "Studies on the Staphylococcus Growth Stimulatory Factors."

August 25: E. Lester Smith, "New Studies on Vitamin B₁₂"; C. C. Ungley and A. L. Latner, "Vitamin B₁₂ and the Intrinsic Factor"; H. G. Wijmenga and N. V. Organon, "Investigations on Intrinsic Factor"; J. W. G. Porter, "New Forms of Vitamin B₁₂." Discussion, J. J. Pfiffner: J. W. G. Porter, "Function of Antibiotics in Growth Stimulation." Discussion, T. D. Luckey: Kenneth L. Blaxter, "The Role of Vitamin E in the Nutrition of the Calf." Discussion, J. K. Loosli.

August 26: Elaine P. Ralli, "Pantothenic Acid in Relation to Stress"; Mercedes Thérien, "Ascorbic Acid and Cold Weather Stress"; A. E. Axelrod, "Role of Vitamins in Antibody Production."

August 27: Charles Heidelberger, "Nucleic Acid and Protein Biosynthesis"; David Shemin, "Porphyrin Synthesis"; G. L. Cantoni, "Enzymatic Transmethylation"; S. H. Hutner, "Nutritional Requirements of Various Protozoa."

August 28: M. J. Coon, "Intermediary Metabolism of Amino Acids as Studied with Radio Carbon"; E. C. De Renzo, "The Nature of the Xanthine Oxidase Factor."

CANCER

Alfred Gellhorn, *Chairman*; Albert Tannenbaum,
Vice Chairman

August 31: J. H. Quastel and A. Cantero, "The Effect of Glucosamine on Tumor Growth"; Harris Busch, "Studies of Oxidative Metabolism of Tumors *in Vivo*"; Jacob Furth, "Character of I^{131} Induced Pituitary Growth; Hormonal and Histological Changes Accompanying Acquisition of Autonomy"; Robert Briggs and Thomas King, "Transplantation of Embryonic Nuclei and the Problem of Nuclear Differentiation."

September 1: Frances L. Haven, "Lipid Metabolism in Tumor-Bearing Animals"; Robert Olson, "Lipogenesis and Lipoprotein in Tumors"; C. Chester Stock, H. C. Reilly, Frederick S. Philips, Sonja Buckley, Donald Clarke, John Ehrlich and Quentin Bartz, "An Anti-Tumor Preparation from a Soil Microorganism. A Laboratory Investigation"; David A. Karnofsky and James Ewing, "B. Clinical Trials."

September 2: Bjerne Pearson, "Cytochemical Studies During Carcinogenesis"; M. J. Kopac, "Submicro Enzyme Chemistry of Normal and Neoplastic Cells"; Hattie E. Alexander, "A. The Biologic Activity of Desoxyribose Nucleic Acids as Hereditary Determinants in Bacteria"; Stephen Zamenhof, "B. Recent Studies on the Chemistry of Heredity Determination in Bacteria."

September 3: Edwin E. Osgood, "The Physiology of Normal and Leukemic Leukocytes." Other subjects and speakers to be announced.

September 4: Ernest L. Wynder, "Clinical and Experimental Studies on the Etiology of Lung Cancer"; Johannes Clemmesen, "Cancer Endemiology."

Program at New Hampton School

ION EXCHANGE

W. Juda, *Chairman*; J. Schubert, *Vice Chairman*

June 15: Round Table Discussion on New Ion Exchange Materials: *Moderator*: K. W. Pepper; *Participants*: I. M. Abrams, R. E. Anderson, R. Kunin. Symposium on Water Conditioning: M. E. Gilwood, F. K. Lindsay, A. C. Reents.

June 16: Symposium on Water Conditioning: V. J. Calise, T. A. Kirkham, H. P. Gregor, "Non-aqueous Ion Exchange"; W. Cohn, C. Brown, "Biochemical and Medical Applications."

June 17: K. W. Pepper, "Recent European Developments in Ion Exchange Applications"; K. Kraus, "Inorganic Applications"; N. W. Rosenberg, D. Lewis, "Electrochemistry of Ion Exchange Resins."

June 18: G. Scatchard, "Electrochemistry of Ion Exchange Resins"; A. Katchalsky, "Properties of Polyelectrolyte Solutions"; P. Doty, "Properties of Polyelectrolyte Solutions"; W. C. Bauman, "Report on Nomenclature."

June 19: R. A. Ruehrwein, "Synthetic Polyelectrolytes as Soil Conditioning Agents"; A. Opler, "Use of Calculating Machines in the Analysis of Ion Exchange Separations."

NUCLEAR CHEMISTRY

C. D. Coryell, *Chairman*; I. Perlman, *Vice Chairman*

June 22-26: Nuclear Decay Processes: Spectroscopy and Systematics, 3 sessions; Nuclear Fission, 1 session; Transmutation Reactions Including Photonuclear, 2 sessions; Nuclear Techniques: Chemical, 1 session; Nuclear

Techniques: Physical, 1 session; Microwave, Atomic Beam, and Spectroscopic Methods, 1 session.

RADIATION CHEMISTRY

Milton Burton, *Chairman*

June 29: Ellison Taylor, *Chairman*; John L. Magee, "Theoretical Introduction, Part I"; Robert L. Platzman, "Theoretical Introduction, Part II"; Milton Burton, "Radiation Chemistry of Organic Mixtures"; Amos S. Newton, "Effects of Structure and Functional Groups in the Radiolysis of Organic Compounds."

June 30: Harold A. Dewhurst, *Chairman*; A. O. Allen, "Review: Radiation Chemistry of Water and Aqueous Inorganic Systems"; J. A. Ghormley and A. C. Stewart, "Radiation Chemistry of Ice"; E. J. Hart, "Radiation Chemistry of Aquo-Organic Solutions"; C. J. Hochanadel, "Radiation Actinometry."

July 1: Wallace Davis, *Chairman*; Fred L. Mahler and Vernon H. Dibeler, "Mass Spectrometer Studies of the Ionization Process"; Benjamin P. Burt, "Use of Electric Fields in Study of Mechanisms"; W. H. Hamill and R. R. Williams, Jr., "Decomposition of HBr in Presence of Rare Gases"; John E. Willard, "Hot Atom Reactions of Halogens in Hydrocarbon and Alkyl Halide Systems."

July 2: Warren M. Garrison, *Chairman*; Session on techniques. Short uninvited papers exclusively. More detailed program will be given later. This session is to be very informal but the program will be rigidly followed. L. E. Brownell, *Chairman*; Bernard Manowitz, "Nuclear Reactors, Fission Products and Their Possibilities and Limitations for the Industrial Future of Radiation Chemistry"; John G. Trump, "High-Voltage Machines and Their Possibilities and Limitations in the Industrial Future of Radiation Chemistry."

July 3: B. E. Proctor and S. A. Goldblith, "Food and Drug Sterilization"; E. L. Gaden, "Industrial Chemical Potentialities."

INORGANIC CHEMISTRY

E. O. Brimm, *Chairman*; J. J. Katz, *Vice Chairman*

July 6-10: Transition Metal Compounds with Metal-Carbon Bonds: G. Wilkinson, "Organometallic Compounds"; J. Chatt, "Olefin-Addition Compounds"; E. O. Brimm, "Metal Carbonyls."

Mechanisms of Inorganic Reactions: R. E. Connick, "Reactions Involving Electron Transfer"; H. Taube, "Reactions Involving Atom Transfer"; R. G. Pearson, "Substitution Reactions."

Chemical Aspects of Mineral Formation in the Earth's Crust: E. F. Osborn.

Some Aspects of Coordination Chemistry: F. P. Dwyer.

CHEMISTRY AND PHYSICS OF METALS

Harvey Brooks, *Chairman*; J. Goldman, *Vice Chairman*

July 13: Band Theory, Crystal Structure, and Phases: Speaker to be announced, "Alloy Phase Diagrams in Relation to Band Structure"; C. Zener, "Interaction of the Fermi Surface with Brillouin Zone Boundaries and Its Influence on Crystal Structure"; J. C. Slater, "Critique of Band Theory as Applied to Problems of Metallic Structure"; J. O. Betterton and John Frye, "Phase Diagrams and Electronic Structure of Alloys Involving Transition Elements"; H. B. Huntington, "Influence of Electronic Structure on Elastic Constants of Metals"; B.

Averbach, "Electronic Properties of Order-Disorder Systems."

July 14: Modification of Bands by Aperiodic Structures: Speaker to be announced, "Discrete Energy Levels in Metals due to Addition of Foreign Atoms and Its Implications for Band Theory"; D. Pines, "Plasma Oscillations and Electronic Structure of Metals"; J. C. Slater, "Band Structure and Order-Disorder." Magnetic Properties of Conduction Electrons: N. Bloembergen, "Effect of Electronic Paramagnetism on Nuclear Resonance"; C. Kittel, "Free Spin Paramagnetic Resonance in Relation to Electronic Structure."

July 15: Transition Elements: Speaker to be announced, "Energy Bands in Transition Elements"; W. Kohn, "Recent Progress in the Theoretical Calculation of Energy Bands in Transition Elements"; J. Goldman, "Survey of Electronic Specific Heats, Hall Effect, and Magnetic Susceptibility in Transition Elements." Round Table Discussion on Magnetic Structure of Chromium: Fine, Shull, Friedberg, Zener, E. Pugh, "The Hall Effect in Ferromagnetics"; Kriesman, "Magnetic Susceptibility of Transition Elements."

July 16: Optical Properties: L. Apker, "Comparison of Soft-X-Ray Emission and Optical Photoelectric Method for Measuring Density of States"; E. R. Pirori, "Limitations and Advantages of X-Ray Spectroscopy for Determining Electronic Energy Levels in Metals"; Speaker to be announced, "Review of Recent Work on X-Ray Spectroscopy." Electrical Resistivity: Speaker to be announced, "Pressure Effects on the Electrical Resistance of Alloys and Pure Metals"; E. Mendoza, "Thermal and Electrical Conductivity of Non-supereconducting Metals at Low Temperatures"; J. Korringa, "Low Temperature Electrical Properties with Special Reference to Solutions of Transition Metals in Noble Metals."

July 17: Ferromagnetism: C. Shull, "Ferromagnetism and Atomic Moments of Transition Metals by Neutron Diffraction"; W. Kleiner, "Theory of Magnetic Form Factor for Neutron Scattering"; R. Weiss, "Atomic Moments in Heusler and Other Alloys."

MICROBIOLOGICAL DETERIORATION

Glenn A. Greathouse, *Chairman*; William J. Robbins and R. E. Vicklund, *Vice Chairmen*

July 20: Studies of Causes of Microbiological Deterioration; Microbiological; Fungi and Bacteria: William J. Robbins, "The More Important Microbiological Agents of Deterioration"; David Gottlieb, "Metabolic Products and Their Relations to Detoxication of the Fungicide or Bactericide." Studies on Prevention of Microbiological Deterioration; Physical-Chemical Aspects of Deterioration Problems: Glenn A. Greathouse, Introductory Remarks; Adrien Albert, "Ionization, pH, and Other Physical Factors in Relation to Biological Activity."

July 21: Chemical Structure and Biological Activity: S. Chaberek, "Theory of Chelation"; Adrien Albert, "Chelation and Its Role in Biological Activity"; S. S. Block, E. G. Kovach, and David Barnes, "Recent Data on Chelating Compounds and Their Biological Activity."

July 22: Harris L. Friedman, "Influence of Isosteric Replacements Upon Biological Activity"; H. O. Halvorson, "Mechanisms of Inhibiting Enzyme Formation by the Use of Amino Acid Analogues." Radioactive Isotopes and Their Role in Preservation Studies: Lawrence P. Miller and S. E. McCallan, "Use of Radioactive Trac-

ers in Determining Rate of Uptake and Dose Required for Inactivating Fungus Spores"; M. M. Baldwin, "Fungicide-Fungi Spore Sorption Studies"; Glenn A. Greathouse and David Barnes, "Radioactive Cellulose and Fungicides and Their Role in Microbiological Deterioration Studies."

July 23: Discussion of Susceptible and Resistant Materials: W. E. Yelland, "Chemical Modification of Cellulose and Its Relation to Biological Activity"; R. H. Bescher, "Wood Preservation"; T. F. Cooke, "Resin Treatment of Cellulosic Fabrics to Prevent Microbiological Deterioration"; J. R. Kanagy, "Leather Preservatives."

July 24: Prediction of Things to Come: Five minutes will be allotted the following to discuss the prediction of things to come in this field of endeavor: William J. Robbins, R. E. Vicklund, Adrien Albert, and other representatives of government, educational, and research institutions, and industry.

STATISTICS IN CHEMISTRY

George E. Kimball, *Chairman*

July 27: Point Estimation and Confidence Intervals.

July 28: Analysis of Variance and Design Experiments.

July 29: Operations Research and Chemistry.

July 30: Statistical Short-Cuts.

July 31: Training Chemists to Use Statistics.

CHEMISTRY OF STEROIDS AND RELATED NATURAL PRODUCTS

Carl Djerassi, *Chairman*

August 3: I. E. Bush, "Chromatographic Behavior and Biological Activity of Non-Benzenoid Steroid Hormones as a Function of Structure"; R. N. Jones, "Infrared Spectra and Structure of Steroids"; D. H. R. Barton, "Some Recent Progress in Triterpenoid Chemistry."

August 4: E. R. H. Jones, "Structure of the Poly-porenic Acids"; O. Jeger, "Relationship of Tetracyclic Triterpenoids to Steroids"; L. F. Fieser, "Chemistry and Metabolism of Cholesterol and Companions"; R. B. Woodward, Subject to be announced.

August 5: G. Rosenkranz and F. Sondheimer, "Recent Progress in Steroid Chemistry in Mexico"; H. Heusser, "Recent Work in the Field of Steroid Hormones and Related Compounds in Switzerland"; L. H. Sarett, "Total Synthesis of Adrenal Hormones."

August 6: R. B. Turner, "Rearrangements and Stereochemical Properties of Steroids"; J. Fried, "Chemical Studies on Steroidal Microbiological Oxidation Products."

August 7: N. L. Wendler, "Steroid C/D Ring Transformations"; M. Ehrenstein, "Partial Synthesis of Certain Steroid Hormone Analogs."

ANALYTICAL CHEMISTRY

Harry Levin, *Chairman*; L. B. Rogers, *Vice Chairman*
Unusual Applications of Analytical Chemistry to the Solution of Problems

August 10: W. E. Campbell, "Communications"; W. Rieman, III, "Analytical Applications of Ion-Exchange Resins."

August 11: H. F. Beeghly, "Ferrous Metals"; Mark G. Inghram, "Chemical and Isotopic Analyses with the Mass Spectrometer as Applied to Geological Problems."

August 12: Norman Wright, "Application of Infrared Analytical Instruments to Plant Production Streams"; W. C. McCrone, Jr., "Microscopy."

August 13: Joseph L. Gormley, "Laboratory Techniques in Criminal Investigations"; Harold A. Frediani, "The Determination of Microgram Quantities of Pharmaceuticals."

August 14: Phillip W. West, "Coordination Chemistry in Analysis and Research."

ORGANIC COATINGS

Henry Grinsfelder, *Chairman*; Lehman Hoag, *Vice Chairman*

August 17: Introductory Remarks: Sam Loshaek, "Basic Considerations Relating to the Kinetics and Extent of Cure in Vinyl Type Coating Materials"; John W. Swanson, "A Study of Film Splitting in Roller Coating Operations"; Harry Burrell, "The Relationship of Theoretical High Polymer Chemistry to the Wrinkle Phenomenon."

August 18: Frank Long, "Diffusion of Water and Solvents in Organic Films"; Edward G. Bobalek, "Electron Microscopy of Pigmented Films."

August 19: D. F. Herman, "Chemistry of the Organotitanium Compounds"; H. H. Beacham, "Utilization of Organotitanium Compounds in Coating Systems"; S. B. Elliot, "Photosensitive Coatings"; John Fletcher, "Practical Considerations of Relationships of Organic Coatings to Vacuum Metalizing of Plastics and Metal Surfaces."

August 20: Ralph J. Wirshing, "Vagaries of Paint Testing"; H. P. Meissner, "Surface Adhesion" (Tentative); Albert G. H. Dietz, "Observations of the Visco Elastic Behavior of High Polymers at Various Rates of Strain and Load Application and Various Temperature Levels" (Tentative).

August 21: G. N. Bruxelles, "Measuring the Gloss of Organic Coatings."

PROTEINS AND NUCLEIC ACIDS

Kurt G. Stern, *Chairman*; M. L. Anson, *Vice Chairman*

August 24: Speaker to be announced, "Relation of Interactions Between Groups Within an Individual Protein or Peptide Molecule and the Configuration of Peptide Chains"; W. T. Astbury, "Interactions Influencing the Folding and Unfolding of Protein Chains, and Relations

to Other Protein Interactions"; D. F. Waugh, "Protein-Protein Interactions in Solutions and in Precipitates."

August 25: P. Doty and K. G. Stern, "Reactions of Nucleic Acids and Other Polyelectrolytes with Proteins"; W. H. Stein, "Separation of Proteins by Chromatography"; E. L. Durrum, "Electrophoresis in Immobilized Solvents."

August 26: Speaker to be announced, "Large Scale Fractionation of Proteins"; D. Surgenor, "Fractionation of Proteins by Precipitation with Heavy Metal Salts"; Speaker to be announced, "Role of Combination of Heavy Metal Ions with Proteins in Enzyme Activation and Protein Stabilization."

August 27: I. Klotz, "General Thermodynamic and Structural Theory of Interactions Between Proteins and Ions"; K. Bailey, "Enzymatic Transformations of Proteins into New Proteins"; C. Fromageot, "Controlled Production of Peptides from Proteins."

August 28: Lyman Craig, "Fractionation and Isolation of Peptides"; H. Neurath, "Structure of Peptides as Determined by Enzymatic and Other Methods, Including End Group Methods"; K. Linderström-Lang, "Résumé and Perspectives."

COAL

A. C. Fieldner, *Chairman*; M. A. Elliott, *Vice Chairman*
Coal as a High Polymer

August 31: H. F. Mark, "High Polymer Chemistry Lecture"; A. Gillet, "Coal Polymers"; I. G. C. Dryden, "Solvent Extraction of Coal Polymers."

September 1: Reactions of Coal Polymers: H. H. Storch, "Hydrogenation"; Everett Gorin, "Pyrolysis."

Surface Phenomena in Relation to Coal

September 2: John Turkevich, Lecture, "Concepts and Techniques in Surface Chemistry"; R. B. Anderson, "Sorption and Desorption."

September 3: A. A. Orning, "The Role of Carbon-Oxygen Complexes in the Reactions of Solid Fuels"; Nathaniel Arbiter, "Mineral Flotation Principles"; H. F. Yancey, "Coal Flotation Applications."

Round Table Discussion of Unsolved Problems

September 4: C. R. Kinney, "High Polymer Chemistry of Coal"; N. K. Chaney, "Surface Chemistry of Coal."

Pacific Division Meeting

Robert C. Miller, *Secretary*

Pacific Division

THE 34th annual meeting of the Pacific Division, AAAS, will be held in Santa Barbara, California, June 15-20, 1953. Registration will open Monday morning, June 15, at 9 o'clock, at the Santa Barbara Civic Recreation Center. The Carrillo Hotel has been designated the headquarters hotel. Requests for accommodations at hotels, motels, and auto courts should be sent to the Santa Barbara Convention Bureau.

The presidential address of C. D. Shane, president

of the Pacific Division, will be given Tuesday evening, June 16, on "The Distribution of Galaxies in Space." On Wednesday evening, June 17, W. F. Libby of the Institute for Nuclear Studies, University of Chicago, will lecture on "Radiocarbon Dating."

Seventeen societies associated or affiliated with the Pacific Division will participate in the Santa Barbara meeting, with symposia and sessions for submitted papers. There will also be a special symposium Wednesday morning, June 17, on the recent research programs sponsored by the National Research Council through the Pacific Science Board.

Local arrangements are in charge of a General Committee, of which John Cushing, of the University of California at Santa Barbara, is chairman.