Gordon Research Conferences

Alexander M. Cruickshank

The Gordon Research Conferences will be held in New Hampshire from 14 June to 3 September, and in Wisconsin from 28 June to 2 July, and from 26 July to 27 August.

Purpose. 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 speakers and discussion groups. Sufficient time is available to stimulate informal discussion among the members of each conference. 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, or participation in discussion groups, as the individual desires. This type of meeting is a valuable means of disseminating information and ideas to an extent that could not be achieved through the usual channels of publication and presentation at scientific meetings. In addition, scientists in related fields become acquainted and valuable associations are formed that often result in collaboration and cooperative efforts among laboratories.

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 subject under discussion. The purpose of the program is to bring experts up to date on the latest developments, to analyze the significance of these developments and to provoke suggestions concerning the underlying theories and profitable methods of approach for scientific research. The review of known information is not desired.

In order to protect individual rights and to promote discussion it is an established requirement of each conference that no information presented is 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. Attendance at the conference is by application. Individuals interested in attending the conferences are requested to send their applications to the director at least 2 months prior to the date of the conference.

Applications must be submitted in duplicate on the standard application form which may be obtained from the office of the director. This procedure is important because certain specific information is required in order that a fair and equitable decision on the application may be made. Attendance at each conference is limited to approximately 100 conferees.

The director will submit the applications of those requesting permission to attend a conference to the committee for that conference. This committee will review the applications and select the members in an effort to distribute the attendance as widely as possible among the various institutions and laboratories represented by the applications. A registration card will be mailed to those selected. *Advance registration by mail for each conference is required and is completed on receipt of the card and the deposit of $30.* This advance deposit is not required from foreign scientists. Checks are to be made payable to the Gordon Research Conferences. The deposit will be credited against the fixed fee for the conference. A registration card not accompanied by the deposit will not be accepted.

Special Fund. A special fund is provided from the registration fee and is made available to the chairman of the conference for the purpose of increasing the participation of research scientists who could not otherwise attend and participate because of financial limitations. Its use is not limited to scientists who have been invited by the chairman as a speaker or discussion leader. The money is to be used as an assistance fund only and may be used to contribute toward conferees' travel expenses, registration fee, and/or subsistence expenses at the conference, or both. Total travel and subsistence expenses usually will not be provided.

The Board of Trustees of the conferences has established a fixed fee for resident conferees at each conference. This fee was established to encourage attendance for the entire conference and to increase the Special Fund that is available to each conference chairman for the purpose of assisting conferees who attend a conference at total or partial personal expense with their travel or subsistence expenses, or with both. It is to the advantage of all participants to attend a conference for the entire week. *The fixed fee will be charged regardless of the time a conferee attends the conference—that is, for the periods of from 1 to 4½ days. An additional charge per night per person will be made for a room with a private bath or for a single room, if no double rooms or roommates are available.* These rooms will be assigned in the order that applications are received. An additional charge will also be made for rooms occupied more than five conference nights (Sunday through Thursday).

The fixed fee will cover registration, room (except single room or room with bath), meals, and services for resident conferees. It will not provide for golf, telephone, taxi, laundry, conference photograph, or any other personal expenses.

Conferees are expected to live at the conference location because one of the objectives of the conferences is to provide a place where scientists can get together informally for discussion of scientific research. When special circumstances warrant a request to live elsewhere permission must be obtained from the director. If the request is approved these nonresident conferees will be charged a registration fee of $65, instead of the resident fee of $50.

Conferees living at the conference location who will pay all or part of the fixed fee as a personal expense may request a reduction of $25 in the registration fee. *Application for this special fee must re requested at the Conference office during the conference.*

Accommodations are available for wives who wish to accompany their husbands and for children at least 12

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years of age. All such requests should be made at the time the attendance application is submitted because these accommodations, limited in number, will be assigned in the order that specific requests are received. Pets are prohibited at the conference site.

Fees:

New Hampshire and Wisconsin		
Fixed Fee		$130
Registration, resident conferee	$50	
Subsistence, including services	80	
Registration (nonresident)		65
Resident guest charges		80
Subsistence, including services for 5 conference days		
Deposit (conferees only)		30

Cancellation. The deposit will be forfeited if an approved application for attendance at a conference is cancelled *This deposit is not transferable to another conferee or conference.*

Program. The complete program for the 1971 Gordon Research Conferences is published in this issue of *Science.* Reprints are available on request.

Membership. Requests for membership in the conferences, or for additional information, should be addressed to: Dr. Alexander M. Cruickshank, Director, Gordon Research Conferences, Pastore Chemical Laboratory, University of Rhode Island, Kingston, Rhode Island 02881. Telephone 401-783-4011.

Mail for the office of the director from 14 June to 3 September 1971 should be addressed to Dr. Alexander M. Cruickshank, Director, Gordon Research Conferences, Colby Junior College, New London, New Hampshire 03257. Telephone 603-526-2870.

The program to be presented is as follows:

Adhesion, Science of

David H. Kaelble, chairman; Harvey Alter, vice chairman.

23 August. (F. W. Fowkes, discussion leader): A. W. Neumann, "Thermodynamic status of contact angles"; R. J. Good, "Theory of interfacial interactions and the real level of probability of interfacial failure"; V. A. Parsegian, "The physical problem of biological adhesion."

24 August. (L. H. Lee, discussion leader): W. E. Walles and T. D. Schmidt, "Structure of surface sulfonated plastics using electron microscope techniques"; W. Poppe, "Interfacial phenomena and adhesive forces in electroplated plastics"; A. Krivis, "Adhesives from the sea."

25 August. (K. Hara, discussion leader): K. Nakao, "Superposition of time-temperature-thickness of adhesive in peel strength"; R. P. Petrick, "Bond strength of elastomer adhesives"; T. Hata, "Rheological consideration of the transition between interfacial and cohesive modes of failure."

26 August. (H. Alter, discussion leader): J. L. Anderson, "The chemisorbed monolayer"; R. L. Patrick "Mechanisms of interfacial failure in composite systems"; W. C. Hamilton, "Surface characterization of metal adherends"; R. Wegman, "Adhesive bonding to metal adherends."

27 August. (C. A. Dahlquist, discussion leader): A. Gent, "Elastic instabilities, cavitation, and fracture"; W. G. Knauss, "Fracture mechanics and the time dependent strength of adhesive joints."

Analytical Chemistry

Donald T. Sawyer, chairman; John T. Funkhouser, vice chairman.

9 August. The analytical challenges of environmental pollution (James Dorsey, discussion leader): Peter K. Mueller, "Air pollution"; Samuel Faust, "Water pollution." (Michael Burke, discussion leader): James Dwyer, "Separations in biochemical systems."

10 August. Advances in gas chromatography (Michael Burke, discussion leader): C. S. G. Phillips, "Gas-solid chromatography"; L. B. Rogers, "Precision gas chromatography." (John T. Funkhouser, discussion leader): Charles N. Reilley and Kenneth W. Gardiner, "Graduate training in analytical chemistry."

11 August. Chemical applications of modern electrochemistry (Harry B. Mark, Jr., discussion leader): Allan J. Bard, "Organic systems"; Theodore Kuwana, "Spectrophotometry at interfaces"; Fred Anson, "Transition metal complexes"; George Wilson, "Metalloenzymes."

12 August. Applications of NMR spectroscopy (Donald E. Leyden, discussion leader): James L. Sudmeier, "Coordination and biological chemistry"; James Shoolery, "Carbon-13 and other non-proton nuclei." (John T. Funkhouser, discussion leader): Open session.

13 August. (Robert Chrysler, discussion leader): Jack W. Frazer, "Interfacing analytical instrumentation with computers."

Animal Cells and Viruses

David Baltimore, chairman; Sheldon Penman, vice chairman.

30 August. P. Choppin, "Membranes and viruses"; H. Lodish, "Protein synthesis: cellular and viral."

31 August. A. Huang, "Viral interference"; J. Darnell, "Messenger RNA's: cellular and viral."

1 September. J. Huberman, "DNA synthesis and integration"; W. Joklik, "Enzymes of reovirus and vaccinia."

2 September. D. Baltimore, "RNA replication and transcription"; P. Duesberg, "Biochemistry of RNA tumor viruses."

3 September. T. Benjamin, "Transformation."

Atomic and Molecular Interactions

Robert P. Futrelle, chairman; Donald A. McQuarrie, vice chairman.

16 August. W. E. Baylis, "Pseudopotential methods for calculating alkali-rare gas interactions"; S. Y. Ch'en, "Line shapes and satellites in foreign gas broadening"; A. D. Buckingham, "Molecular moments and intermolecular forces"; R. J. Cross, Jr., "Rotationally and vibrationally inelastic scattering."

17 August. W. C. Stwalley, "Franck-Condon factors for bound and continuum states"; H. L. Welsh, "Dimer spectra"; A. C. Wahl, "*Ab initio* calculations of intermolecular forces"; P. W. Langhoff, "Upper and lower bounds on long range potentials."

18 August. Open sessions for recent developments and special topics.

19 August. Y. T. Lee, "Interatomic potentials for rare gas systems from crossed molecular beam experiments"; Alan Gallagher, "Collision processes involving excited atomic states"; J. O. Hirschfelder, "Intermolecular forces"; H. J. M. Hanley, "Determination of interatomic potentials from transport and equilibrium data on gases."

20 August. Daniel Kleppner, "New methods for studying excited state interactions using atomic beams"; Darrell E. Burch, "Non-Lorentzian features in molecular vibration-rotation bands"; J. Van Kranendonk, "Collision-induced light scattering and absorption in simple gases."

Bacterial Cell Surfaces

Alexander Tomasz, co-chairman; Loretta Leive, co-chairman.

26–30 July. The organization and function of cell surface layers, and their relation to cell growth, division, and interaction with the external environment. "Plasma membrane: lipids, proteins, mesosomes, organization." "Extramembranal components: Morphology; chemical architecture including peptidoglycan, protein, lipopolysaccharide, and teichoic acids; the periplasm; assembly and function of extramembranal components and extracellular proteins." "Cell division: control of cell division; DNA division and its relation to the surface; morphology." "Interaction with the outside: cell and cell, including mating and predators; cells and virus; cell and macromolecules, including DNA and colicins: cell and micromolecules, including chemotaxis, permeability barrier, transport, and binding proteins."

Biochemistry in Agriculture

Arthur W. Galston, chairman; Atwood C. Page, Jr., vice chairman.

21 June. Biochemical action of air pollutants: J. B. Mudd, "Effects of ozone and peroxyacetyl nitrate on plants"; D. C. McCune, "Effects of fluoride and SO_2 on plants"; John Suttie, "Effects of fluoride on animals"; Jack Finklea, "Effects of air pollutants on man."

22 June. Lipid substances affecting plant development: P. E. Kolattukudy, "Lipid components of plant cuticles"; B. B. Stowe, "Lipid promoters of stem growth"; J. W. Mitchell, "Lipid growth promoters from pollen"; Nagabhushanam Mandava, "The chemistry of the brassins."

23 June. Insect biochemistry: Gerardus B. Staal, "Juvenile hormones of insects and their use in insect control"; W. W. Kilgore, "Insect chemosterilants"; J. P. Vite, "Pheromones and attractants for bark beetles"; James Truman, "Role of a biological clock in the control of ecdysis of silk moths."

24 June. Plant protoplasts: E. C. Cocking, "Production and fusion of isolated plant protoplasts"; Albert Ruesink, "Wall formation and hormone action in isolated protoplasts"; Ralph Hardy, "Nitrogen fixation: a global outlook."

25 June. New pathways in pesticide research: Hugh Sisler, "Selectivity in fungicides"; Milton Zucker, "The role of phenolics in plant disease resistance."

Biological Interaction and Transport

T. E. Thompson, chairman; T. E. Andreoli, vice chairman.

Biomembranes and Lipid Bilayers

23 August. Ion selectivity: B. C. Pressman, G. Eisenman, G. Szabo, D. C. Tosteson, and P. Horowitz.

24 August. Electrical excitability: C. M. Armstrong, J. W. Moore, P. Mueller, and A. Finkelstein.

25 August. Non-ionic permeability: J. M. Diamond, R. M. Hays, T. E. Andreoli, and D. Papahadjopoulos.

26 August. Active transport: R. L. Post, W. R. Albers, E. H. Cordes, and T. E. Thompson.

27 August. Summary discussion: D. C. Tosteson.

Biomaterials, Science and Technology of

Donald J. Lyman, chairman; Charles A. Homsy, vice chairman.

2 August. D. Lyman, "Biomaterials in reconstruction surgery and artificial organs"; J. R. Cahoon and H. W. Paxton, "Characterization of metal surfaces"; F. Fowkes, "Characterization of non-metal surfaces"; E. Salzman, "Blood—its chemistry and reaction"; E. Bernstein, "Red blood cells"; N. Calvanico," "Blood proteins."

3 August. H. L. Goldsmith, "Blood particle behavior in flow"; K. Keller, "Fluid mechanical effects in flowing systems on mass transfer"; P. Blackshear, "Fluid mechanical effects in flowing systems on cellular elements"; V. Gott, "Thrombotic complications in the surgical use of materials"; C. Kwan-Gett, "Clinical sequellae of circulatory assist devices."

4 August. C. Homsy, "Biomaterials and reconstruction of the skeletal system"; M. Brookes, "Skeletal system analogues on osseous circulation"; J. P. Paul, "Skeletal system mechanics and dynamics"; P. Walker, "Bio-tribology"; S. Perrin, "Biomechanics and biochemistry of bone healing."

5 August. S. Hulbert, "Calcification—bone"; D. Lim, "Calcification—soft tissue"; D. Hill, "Cell growth on surfaces"; J. Davila, "Tissue healing in vascular prostheses"; R. Dedrick, "Design and physiological constraints on artificial organ devices"; C. Homsy, "Modeling techniques in prosthetic device development—*in vitro* testing."

6 August. R. Falb, "Enzyme surfaces"; T. M. S. Chang, "Artificial cells"; J. Bougas, "Problem areas in medicine: needs for new materials or devices"; D. J. Lyman, "Natural versus synthetic polymers."

Biomathematics, Theoretical Biology and

Simon A. Levin, chairman; Walter Freeman, vice chairman.

14–18 June. (Theodosius Dobzhansky, session chairman): Richard Lewontin, "Population genetics of multi-locus systems"; Howard Levene, "Logistic type models of competition"; Michael Rosenzweig, "Stability and evolution in exploitative systems"; Thomas Schoener, (subject to be announced); Lawrence Slobodkin, "Formal similarities between evolutionary theory and environmental planning"; George Weiss, "Deterministic and stochastic models of epidemics"; Robert Ricklefs, "The implications of some life history models for the real world"; Martin L. Cody, "Niche parameters in bird communities"; Joel Cohen, "Combinatorial and dynamic approaches to community structure"; Elliot Montroll, "A statistical mechanics of interacting species"; Leon Glass, "Cooperative components, spatial localization and oscillatory cellular dynamics"; Jerome K. Percus, "Quantitative aspects of morphogenesis"; David Markowitz, "Chemical organization in cells"; Dan Cohen, "Models of development and regeneration of vascular systems"; Evelyn Keller, "Chemotaxis in *E. coli*"; Morrel Cohen, "Theories of the control of development"; Anthony Robertson, "The making of neural connections"; Marcus Jacobson, "Necessity and contingency in neurogenesis"; Dominick Purpura, "Postnatal ontogenesis of synaptic organizations in the mammalian brain"; Robert Capranica, "Detection of complex sounds at the level of single nerve cells"; Jack Cowan, "Stochastics of nerve cells"; George Gerstein, "Characterization and plasticity of a neural group"; L. A. Zadeh, "Theory of fuzzy systems and its applications"; Walter Freeman, "Linear systems analysis applied to the mammalian cerebral cortex"; Edgar

Gasteiger, "Beyond homoeostasis and cybernetics: a speculation from studies of neural noise"; David Hellerstein, "Current flow in dendrites: analysis of a simple cortical system"; F. A. Dodge, Jr., "Transmission of visual information over several parallel channels"; Bruce W. Knight, "Encoding of nerve impulses in multiple channels"; Herbert G. Vaughan, Jr., "Empirical and theoretical analysis of the sources of human brain potentials." F. Harary and M. Wilkins, (subjects to be announced).

Bones and Teeth, Chemistry, Physiology and Structure of

M. Paul Goldhaber, chairman; Aaron Posner, vice chairman.

28 June. Short papers (Aaron Posner, session chairman): Growth and differentiation of mineralizing tissues (R. Greulich, session chairman): E. D. Hay, "Origin and role of connective tissue matrix in the embryo."

29 June. J. W. Lash, "Differentiation of cartilage"; H. C. Slavkin, "Differentiation of teeth"; C. P. Leblond, "Growth of the tooth as shown by the uptake of the glycoprotein precursor ^{3}H-fucose." Cyclic nucleotides, prostaglandins and mineral metabolism (Armen H. Tashjian, Jr., session chairman): R. W. Butcher, "Relationships between hormones, cyclic AMP levels and prostaglandins."

30 June. A. L. Steiner, "Radioimmunoassay for the measurement of cyclic nucleotides"; J. P. MacManus, "Cyclic nucleotides and cell proliferation *in vivo* and *in vitro*"; B. B. Davis, "Prostaglandin E_1 and production of renal cyclic AMP"; D. C. Klein, "Prostaglandins stimulate calcium removal from bone—what does it mean?"; F. Murad, "Is there a role for extracellular cyclic nucleotides in clinical medicine?" Bone formation and calcification (James L. Matthews, session chairman): J. Vaughan, "Physiology of bone growth and mineralization, old concepts and new frontiers."

1 July. M. Glimcher, "Effects of phosphate on bone growth"; H. C. Anderson, "Matrix vesicles in mineralizing cartilage"; K. Kuettner, "Biochemical and morphological changes accompanying epiphyseal cartilage differentiation into bone." Pathogenesis and treatment of osteoporosis; recent advances (C. Rich, session chairman): F. Bartter, C. Y. C. Pak, S. A. Middler, and C. S. Delea, "Definition and treatment of osteoporosis"; B. Flanagan and G. Nichols, "Skeletal metabolic studies in osteoporosis."

2 July. B. Morgan, "The relation between osteoporosis and the loss of bone with age"; D. Henneman, "Collagen in bone and other connective tissues"; C. Chesnut, J. Denney, C. Rich, and W. B. Nelp, "Measurement of total body calcium and bone mass by activation analysis in osteoporosis and other bone-wasting diseases."

Cancer

Robert Love, chairman; Richmond T. Prehn, vice chairman.

23 August. (Michael Stoker, chairman): George Todaro, "Genetic susceptibility of human cells to tumor viruses"; Katherine Sanford, " 'Spontaneous' neoplastic transformation of cells in culture." (Joseph Leighton, chairman): J. F. Watkins, "Cell fusion, repressors and malignancy"; Norman P. Salzman, "Isolation and properties of chromosomes from transformed cells."

24 August. (George P. Studzinski, chairman): Robert Perry, "Coordination of synthesis and assembly of ribosomal components"; John Paul, "Gene transcription in eukaryotes." (Lloyd Law, chairman). George Kalf, "Characterization of the mitochondrial 'genophore' and the control of mitochondrial DNA synthesis"; Sheldon Penman, "Protein and RNA syntheis in mitochondria."

25 August. (Hilary Koprowski, chairman): Fred Rapp, "Quantitation transformation of cells in culture by DNA viruses"; Frantisek Sokol, "Mechanism of integration of DNA of oncogenic viruses into the cellular genome." (Leonard Weiss, chairman): Howard Temin, "Mechanisms of carcinogenesis by RNA tumor viruses"; Jacques Harel, "The role of DNA of avian myeloblastosis virus."

26 August. (Charlotte Friend, chairman): Kenneth de Ome, "The mammary tumor virus actively carried by mouse erythrocytes"; Wallace Rowe, "Mouse leukemia virus infections." (Thomas Symington, chairman): K. A. O. Ellem, "Regulation of replication of human diploid cells"; Maria Benyesh-Melnick, "Replication of murine sarcoma virus."

27 August. (Richmond Prehn, chairman): John Frenster, "Ultrastructural probes of chromatin conformation in living leucocytes"; Armin Braun, "The relevance of plant tumor systems to the problems of oncogenesis."

Carbohydrates, Chemistry of

Derek Horton, chairman; Leon Goodman, vice chairman.

21 June. Chemistry of nucleosides (Leon Goodman, discussion leader): K. A. Watanabe, J. P. H. Verheyden, E. M. Acton, and J. P. Horwitz.

22 June. A new look at the structures of polysugars (William J. Whelan, discussion leader).

23 June. Roundtable discussion topics. Application of new physical methods to problems of structure and reactivity (Derek Horton, discussion leader).

24 June. Ionic reactions in carbohydrates (S. Hanessian, discussion leader). H. Paulsen, "Investigations on sugar phosphates." (Speakers and subjects to be announced.)

25 June. Application of new physical methods to problems of structure and reactivity (continued) (L. D. Hall, discussion leader): S. J. Angyal and Bengt Lindberg, "Structural studies on some bacterial polysaccharides."

Catalysis

Sol W. Weller, chairman; Hugh F. Harnsberger, vice chairman.

28 June. J. M. Smith, "Chromatographic tools for studying global kinetics"; J. J. Carberry, "Catalysis and short and long range diffusional gradients"; C. N. Satterfield, "Diffusion in molecular sieves."

29 June. Shape selective catalysis by zeolite T: R. L. Gorring, "Diffusion of *n*-paraffins"; N. Y. Chen, "Diagnosis of structural characteristics by catalytic reactions"; J. J. Fripiat, "Protons in decationated zeolites"; J. B. Uytterhoeven and P. Jacobs, "Assignment of OH bands in the IR spectrum of synthetic faujasites."

30 June. J. F. García de la Banda, "Catalytic oxidation and oxychlorination of hydrocarbons"; H. Wise, "Electronic properties of metal-oxide catalysts in olefin oxidation"; G. A. Somorjai, "Catalytic activity and the structure of surfaces and adsorbed gases."

1 July. E. W. Stern, "Hydrogenation catalysis by palladium complexes"; A. D. Allen, "Coordination of molecular N_2 and its role in N_2 fixation"; R. L. Burwell, Jr., "Stereochemistry and heterogeneous catalysis."

2 July. M. Boudart, "Spillover phenomena with supported metals"; J. C. W. Kuo, "Heat and mass transfer in a catalytic converter system for emission control."

Cell Structure and Metabolism

Robert T. Schimke, chairman; C. R. Park, vice chairman.

21–25 June. Steroid hormone receptors (Isadore Edelman, session chairman): Elwood Jensen; Gerald Mueller; Shutsung Liao. Mechnism of action of steroid hormones (Robert Schimke, session chairman): Gordon M. Tomkins; Frank Kenney; Etienne Baulieu. Hormone actions in invertebrates (Fotis Kafatos, session chairman): Ulrich Grossbach; speakers to be announced. Parathyroid, calcitonin and Vitamin D (John Potts, chairman): (speakers to be announced). Cyclic AMP, protein kinase, and phosphodiesterase (Donald Walsh, chairman): (speakers to be announced). Hormonal control of metabolic pathways (C. R. Park, chairman): (speakers to be announced). Hormones (Stanley Cohen, chairman): (speakers to be announced). Plasma membrane hormone receptor sites (chairman and speakers to be announced).

Cellular Materials, Chemistry and Physics of

Edwin M. Maxey, chairman; H. George Hammon, vice chairman.

16 August. R. H. Immel and P. A. Berman, "New concepts in the expansion and molding of polystyrene foams"; M. Cuscurida, M. Rice, and W. R. Kennedy, "High resilience urethane foams"; R. Hansen, "Further nucleation studies in foams."

17 August. H. Rutherford and V. Angell, "Structural foams"; E. A. Meinecke, D. M. Schwaber, and R. R. Chiang, "Viscoelastic properties of elastomeric foams"; A. J. Papa and W. R. Proops, "A new mechanism for flame retardancy in foams"; H. G. Nadeau, P. Waszeciak, and E. Hayash, "Oxygen index as a measure of flames retardancy in foams."

18 August. R. J. Wasley, L. R. Hawk, E. J. Nidick, Jr., and J. C. Cast, "The Hugoniot and equation of state behavior of ultra high speed impact of plastic foams"; K. Frisch, "Degradation products of polyurethanes"; K. C. Rusch, "Analytical expressions for predicting mechanical properties of foamed materials."

19 August. S. A. Aspey and F. Smith, "Mechanical properties of cellular silicones"; G. Campbell, "Foam process development—a systems engineering approach"; H. G. Nadeau and C. Brown, "Parameters affecting K factor of rigid urethane foams."

20 August. D. Sullivan, "Sound attenuation and dynamic properties of partially fractured foams"; J. P. Bosscher and R. G. DeJong, "Permeability of ruptured closed cell foams."

Coal Science

George Richard Hill, chairman; Douglas S. Montgomery, vice chairman.

5 July. Origin of coal with regard to geotectonics (Irving Breger, session chairman): James M. Schopf, (Origin of coal in the Southern Hemisphere, especially Antarctica, with respect to continental drift, global tectonics, and paleoclimatology.); Elso S. Barghoorn, "Coal deposits of the earth: paleoclimates and paleogeography." (M. King Hubbard, discussion leader). Chemistry associated with coal processing (Irving Wender, session chairman): William S. Wise, "Some aspects of the action of solvents on coal"; H. W. Sternberg, "Solubilization of coal by alkylation."

6 July. Gasification of coal; economics, new concepts and technology (Henry R. Linden, session chairman): H. F. Feldman, Jr., "Hydrogasification reaction model-reactor configuration"; A. J. Forney, "Forty-atmospher gasifer"; J. L. Johnson, "Kinetic model for coal gasification with gas mixtures containing steam and hydrogen"; K. H. Van Heek, "Fundamental studies on coal gasification with regard to the utilization of thermal energy from nuclear high temperature reactors."

7 July. Pollution arising from coal utilization, air-water desulfurization (Arthur M. Squires, session chairman): Douglas E. Eliott, "Fluidized-bed boiler"; S. C. Schuman, "Means for controlling sulfur dioxide."

8 July. Micro structure of coal (Phil Walker, session chairman): Harry Marsh, (Micropore structure of coals and chars and the relation of this structure to utilization and pollution abatement problems.); H. Juntgen, (Pore structure of coal and carbon and the applications of these materials in utilization and pollution abatement.) Petroleum and coal (Alex Oblad, session chairman): J. J. Donnelly, "Present and future petroleum fuels"; T. H. Milliken, "New development in non-hydrogen processing of petroleum." Jack O'Leary, "The future of energy resources in the United States."

9 July. Petroleum and coal (Alex Oblad, session chairman): E. Pollitzer, "New developments in hydrogen processing of petroleum"; Lewis F. Hatch, "Petroleum as a basis for chemicals."

Coating and Films, Chemistry and Physics of

Kurt C. Frisch, chairman; Robert M. Fitch, vice chairman.

23 August. R. Myers, "Rheology of film formation"; I. Krieger, "A rheological corresponding states principle"; J. W. Vanderhoff, "Latex film formation."

24 August. (J. Vasta, chairman): S. Labana, "New developments in powder coatings"; J. M. DiVittorio, "Powder systems"; G. Phillips, "Basic studies of electrodeposition."

25 August. (W. Ropp, chairman): R. M. Fitch, "Dispersion polymerization"; F. A. Waite, "An improved method for the steric repulsive barrier"; H. L. Frisch, "Some aspects of gas diffusion through polymer films."

26 August. (R. M. Fitch, chairman): F. Gay, "Thermal emissivity of polymer films"; W. J. Pangonis, "Generation of charge and its effect on polymer films"; N. Wright, "Surface photopolymerization of coatings from vapor."

27 August. R. Merten, "Heterocyclic ring systems for temperature-resistant coatings for electrical insulation."

Corrosion

John V. Cathcart, chairman; Raymond Hurd, vice chairman.

26 July. (R. Hurd, discussion leader): R. A. Rapp, "Solid state displacement reactions"; G. Wood, "Mechanism of oxidation of Ni-base alloys." (M. J. Pryor, discussion leader): W. W. Smeltzer, "Oxidation properties of Ni-Fe alloys"; F. S. Pettit, "High-temperature transient and steady-state oxidation of Ni-Cr-Al alloys."

27 July. (J. Kruger, discussion leader): D. L. Douglass, "Effect of rare earth additions on the oxidation behavior of Ni-Cr alloys"; K. Hauffe, "High-temperature corrosion of metals and alloys in two oxidants." (H. M. Davis, discussion leader): A. T. Fromhold, "A non-equilibrium approach to corrosion theory"; F. Fehlner, "Oxidation mechanisms at low temperatures."

28 July. (S. Jansson, discussion leader): J. Stringer, "Effect of alloying on oxide plasticity and oxide failure mechanisms in the high-temperature oxidation of Nb and Ta"; R. E. Pawel,

"Stress measurements during the oxidation of refractory alloys." (H. H. Uhlig, discussion leader): H. Leidheiser, "Application of ferromagnetic resonance techniques to the study of surfaces"; Allan Melmed, "LEED - ellipsometry study of the room temperature oxidation of Fe."

29 July. (N. Birks, discussion leader): P. Lacombe, "Electro-transport phenomena in oxides and oxidation kinetics of metals at high temperatures"; P. Sewell, "Surface composition and its influence on the kinetics and morphology of Ni oxidation." (J. B. Wagner, discussion leader): L. Wegmann, "Photoemission electron microscopy—technique and application."

30 July. (C. S. Tedmon, Jr., discussion leader): B. Cox, "Catastrophic oxidation of the zircalloys in fused salts at 300°C"; J. P. Pemsler, "Use of the ion-probe moss spectograph to measure gradients in oxide films."

Crystal Growth

James J. Tietjen, chairman; John R. Carruthers, vice chairman.

Epitaxial Crystal Growth

26 July. The theory of epitaxial film formation (discussion leader to be announced): K. A. Jackson, "Surface structure and interface attachment kinetics"; R. Sigsbee, "Heterogeneous nucleation and initial growth of nuclei." Surface characterization (F. Jona, discussion leader): R. E. Weber, "The theory and instrumentation related to LEED and auger spectroscopy"; L. A. Harris and J. H. Affleck, "Chemical characterization of solid surfaces using auger spectroscopy."

27 July. Growth and characterization of materials for substrate applications (J. R. Carruthers, discussion leader): J. W. Nielsen, "Crystal growth of electro-luminescent and magnetic bubble domain substrates"; A. F. Witt, "Studies of Czochralski growth." Epitaxial growth from the liquid phase (M. Schieber, discussion leader): C. D. Thurmond, "Solution epitaxy and chemical thermodynamics"; J. M. Woodall, "Growth methods and characterization of epitaxial layers prepared by liquid phase epitaxy."

28 July. The chemistry of vapor phase crystal growth (T. B. Reed, discussion leader): H. Schäfer, "Principles of chemical transport with special considerations for crystal growth"; D. Richman, "The chemistry of vapor phase crystal growth in non-equilibrium (flow) systems." Vapor phase crystal growth methods (H. Wiedermeier, discussion leader): R. Nitsche, "Techniques of vapor phase crystal growth."

29 July. Chemical and structural characterization of epitaxial layers (M. S. Abrahams, discussion leader): R. Honig, "Chemical characterization of epitaxial layers"; G. R. Booker, "The structural and defect characterization of epitaxial layers." Special program: S. Hulbert, "Selection of materials for the construction of artificial organs."

30 July. Novel methods of epitaxial crystal growth (M. H. Francombe, discussion leader): E. Kay, "The use of sputtering for epitaxial crystal growth"; A. Cho, "Epitaxy by a molecular beam method."

Applications

Scientists are invited to submit applications for attendance at the Gordon Research Conferences. Application blanks may be obtained by returning the postcard on page 1062C to Dr. Alexander M. Cruickshank, Director, Gordon Research Conferences, University of Rhode Island, Kingston, R.I. 02881.

Cyclic AMP

Charles G. Smith, chairman; Martin Rodbell, Vice Chairman.

14 June. Mechanism of cAMP action (P. Greengard, chairman): "Ribosomal and microtubule protein receptors"; "Protein kinase." Role in differentiation (R. Perlman, chairman): "Contact inhibition"; "Enzyme reduction in prenatal animals"; "Cellular slime molds."

15 June. Drug action and development (G. Drummond and G. Hitchings, co-chairmen): "Applications in discovering new drugs"; "Analogs of cAMP"; "Differential sensitivities of tissue PDE"; "Drug actions in cAMP systems"; "PDE inhibitors and bronchodilation."

16 June. Role of cAMP in the immune response (I. Tabachnik, chairman): "Phagocytic and lymphoid cells"; "Mast cells." Regulation of cellular levels (R. Butcher, chairman): "Intracellular mechanisms"; "Role of prostaglandins."

17 June. Role of cAMP in organ function (J. Hardman, chairman): "Insulin release"; "Myocardial function"; "Brain."

18 June. Clinical significance (H. Lebovitz, chairman): "Metabolism and action of exogenous cAMP"; "Diagnostics applications"; "Involvement in action of cholera toxin." Adrenergic receptor sites and cyclase activation (T. Rall, chairman).

Drug Metabolism

Sanford K. Figdor, chairman.

26 July. R. T. Williams, "Interspecies differences in the metabolism of chemicals in man and animals"; J. R. Fouts and H. M. Peck, "Drug metabolism in experimental toxicology."

27 July. T. R. Tephly, B. N. LaDu, and R. E. McMahon, "Mechanisms of drug metabolism"; R. E. Scheline, "Factors affecting or influencing drug metabolism."

28 July. G. L. Sutherland and J. B. Knaak, "Metabolism and residues in food producing animals"; C. R. Swanson, "Metabolism in plants and soils."

29 July. D. C. Hobbs, "Instrumentation and analytical techniques"; J. J. Burns, "The role of metabolism today."

30 July. G. Levy and S. Riegelman, "Pharmacokinetics and drug therapy."

Elastomers

Albert M. Gessler, chairman; H. Karl Frensdorff, vice chairman.

19 July. (Gerard Kraus, discussion leader): J. P. Kennedy, "Thermoelastic graft copolymers by cationic polymerization"; J. Furukawa and Akihiro Kawasaki, "Structure and properties of alternating copolymers of butadiene and propylene or acrylonitrile"; H. L. Hsieh, "Preparation and properties of epichlorohydrin-based elastomers."

20 July. (H. L. Frisch, discussion leader): L. H. Sperling, "Morphology and mechanical behavior of interpenetrating polymer networks"; William J. MacKnight, "Microphase separation in organic polymers containing ions"; Roger Beatty, "Fatigue in rubber blend systems."

21 July. (F. P. Baldwin, discussion leader): R. L. Zapp, "Interfacial elastomer bonding and covulcanization chemistry"; E. F. Cluff, R. E. Tarney, and J. J. Verbanc, "Sulfur vulcanization of EPDM's—promotion of cure by polyhydric phenols"; Timothy C. P.

Lee, "Relationship between properties on thermal-oxidative aging and network structure."

22 July. (E. M. Dannenberg, discussion leader): A. I. Medalia, "Carbon black aggregate structure and its effect on rubber properties"; J. B. Donnet, "Elastomer–carbon black interactions: a chemist looks at the reinforcement problem." (A. M. Gessler, discussion leader): L. Bateman, "Polyisoprene production in nature's remarkable factory."

23 July. (H. K. Frensdorff, discussion leader): A. N. Gent, A. J. Kinloch, M. Fujimori, R. P. Petrich, and J. Schultz, "Strength of soft adhesive bonds"; S. Davison and G. L. Taylor, "Sequence length and crystallinity in alpha-olefin terpolymers."

Energy Coupling Mechanisms

Lester Packer, co-chairman; D. Rao Sanadi, co-chairman.

Organization of Energy Transducing Membranes

30 August. Membrane structure (L. Packer, discussion leader): T. Gulik; R. B. Park; G. P. Brierley; D. E. Green; C. R. Hackenbrock; P. V. Blair; F. Guerra; T. DeSilva; G. Lenaz; W. J. Vail; A. F. Brodie. Biogenesis of energy transducing membranes (D. R. Sanadi, discussion leader): P. Garland; A. Goffeau; G. Schatz; I. Ohad; F. R. Whatley; D. L. Keister; D. Lloyd; A. Linnane; P. Dallman; R. A. Butow; L. Bogorad.

31 August. Techniques and strategy for localization and organization studies (B. Chance, discussion leader): V. P. Skulachev, H. T. Witt, N. Shavit, D. Wilson, L. Dutton, and M. Erecinska, "Membrane and redox potentials"; A. Azzi, G. Radda, R. Morrison, J. K. Blaisie, J. P. Changeau, P. V. Vignais, and A. Waggoner, "Chemical probes." Organization of ATP synthetase and ATPase (H. A. Lardy, discussion leader): D. Tosteson, E. Racker, W. N. Aldridge, H. Baum, D. R. Sanadi, and A. Senior.

1 September. Organization of electron transport carriers (R. W. Estabrook, discussion leader): M. Klingenberg, R. Fisher, C. P. Lee, I. Ragan, D. Knaff, W. Lynn, and F. McEvoy. Organization of electron transport carriers and other factors (P. Boyer, discussion leader): E. C. Slater, T. DeSousa, G. R. Schonbaum, R. Cross, S. Dahms, B. Beechey, F. E. Hunter, A. Kruger, and B. P. Sani.

2 September. Carriers (S. Papa, discussion leader): A. L. Lehninger, E. Carafoli, G. Blondin, C. Rossi, G. F. Azzone, H. Heldt, J. M. Tager, U. Heber, J. Penniston, L. Wojtczak, and K. Van Dam. Special discussion group on organization and chemical mechanisms of energy transduction (E. C. Slater, discussion leader): L. Ernster, D. E. Green, H. Baum, E. C. Slater, B. Chance, E. Racker, M. Klingenberg, R. E. Hunter, G. F. Azzone, J. H. Wang, D. Weiss, and H. A. Lardy.

3 September. Control mechanisms (J. Williamson, discussion leader): H. A. Lardy, E. J. Harris, D. Siliprandi, R. Harris, P. J. O'Brien, D. E. Griffiths, R. E. Beyer, and K. LaNoue.

Environmental Sciences: Air

James P. Lodge, Jr., chairman; Perry McCarty, vice chairman.

30 August. (Joseph Prospero, discussion leader): R. C. Robbins, "Particulate matter—sources and sinks." (J. M. Mitchell, discussion leader): R. J. Charlson and R. A. Bryson, "Particulate matter—radiative effects."

31 August. (James W. Robinson, discussion leader): C. C. Patterson, "Particulate matter—metals." (John W. Winchester, discussion leader): William Compton, "Particulate matter—organics, pesticides."

1 September. (A. M. Hartley, discussion leader): Elmer Robinson, "Carbon monoxide." (James P. Friend, discussion leader): C. D. Keeling, "Carbon dioxide."

2 September. (George B. Morgan, discussion leader): Dieter Ehhalt, "Hydrogen and methane." (A. E. O'Keeffe, discussion leader): James E. Lovelock, "Freons and sulfur hexafluoride."

3 September. (James P. Lodge, Jr., discussion leader): G. D. Robinson, "Summation."

Enzymes, Coenzymes and Metabolic Pathways

M. Daniel Lane, co-chairman; A. S. Mildvan, co-chairman; Paul D. Boyer, co-vice chairman; Thomas C. Bruice, co-vice chairman.

5 July. Subunit interactions and allosteric mechanisms: E. G. Krebs, "Cyclic AMP-dependent protein kinases"; L. J. Reed, "Pyruvate dehydrogenase complex: structure, function, and regulation"; J. A. DeMoss, "Subunit interactions in the assembly of anthranilate synthetase"; E. R. Stadtman, "The mechanism and regulatory significance of enzyme-catalyzed adenylation and deadenylation of *E. coli* glutamine synthetase"; M. F. Utter, "Active and inactive subunit forms of pyruvate carboxylase from different sources."

6 July. Chemical mechanisms of phosphoryl transfer (W. P. Jencks, chairman): F. H. Westheimer, "The concept of pseudorotation in phosphoryl transfer reactions and its applicability to enzyme catalysis"; P. Haake, "Elucidation of mechanisms of phosphoryl transfer reactions"; S. J. Benkovic, "Studies of model reactions for phosphoryl transfer"; B. Cooperman, "The role of metals in phosphoryl transfer reactions with reference to pyrophosphatase."

7 July. Enzyme mechanisms of phosphoryl transfer: F. A. Cotton, "Crystallographic studies of the mechanism of staphylococcal nuclease"; M. Cohn, "Magnetic resonance studies of enzymatic phosphoryl transfer"; P. D. Boyer, "Isotopic probes of the phosphoryl function in Na^+-K^+ ATPase"; P. A. Srere, "Citrate cleavage enzyme; reactions of the phosphoenzyme intermediate"; L. B. Spector, "A phosphoenzyme intermediary in acetate kinase action."

8 July. Enzyme mechanisms of nucleotidyl transfer (L. A. Loeb, chairman): F. J. Bollum, "Metal ligand inhibition of terminal deoxyribonucleotidyl transferase"; L. A. Loeb, "The function of metal ions in DNA polymerase; magnetic resonance studies"; R. E. Moses, "DNA polymerase II of *E. coli*"; P. R. Schimmel, "Studies of the mechanism of isoleucyl-tRNA synthetase"; J. S. Krakow, "On the mechanism of action of RNA polymerase." J. Beckwith, "The use and misuse of science."

9 July. The mechanism of cobamide enzymes (R. H. Abeles, chairman): H. A. O. Hill, "Studies on the mechanism of diol dehydrase"; J. M. Wood, "Studies on the mechanism of action of cobamide enzymes using a spin-labeled coenzyme"; B. M. Babior, "A radical mechanism for ethanolamine deaminase."

Free Radical Reactions

William A. Pryor, chairman.

14 June. (William A. Pryor, discus-

sion leader): Sidney W. Benson, "Thermochemistry of radical reactions"; Peter Gray, "Gas phase reactions of radicals." (Marvin Poutsma, discussion leader): Jack J. Little, "Solvent effects on radical reactions"; Phillip S. Skell, "Neighboring groups and bridging in the reactions of radicals."

15 June. (Teddy Traylor, discussion leader): Robert C. Neuman, Jr., "Effect of pressure on the decomposition of initiators"; J. C. Martin, "Some new oxygen-18 scrambling results"; Melvin J. Goldstein, "Cage return as studied by kinetic isotope effects." (Cheves Walling, discussion leader): Jack Kampmeier, "Studies of the conformation of radicals"; Frederick D. Greene, "Nitrogen-centered radicals."

16 June. (Bert M. Tolbert, discussion leader): Thormod Henriksen, "Radiation chemistry of nucleic acids"; Richard Holroyd, "Free radicals in radiation chemistry." (Peter Riesz, discussion leader): William A. Pryor, "Reactions of the hydrogen atom in solution."

17 June. E. M. Kosower, discussion leader): Harry B. Demopoulos, "Free radical pathology"; Donald C. Borg, "ESR and porphyrin radicals"; William F. Forbes, "The involvement of radicals in aging."

18 June. (William A. Pryor, discussion leader): G. E. Adams, "Biochemical studies using pulse radiolysis and related techniques"; Lawrence S. Myers, Jr., "Radicals in nucleic acids as studies by radiolysis."

Geochemistry

Philip M. Orville, co-chairman; H. J. Greenwood, co-chairman.

Mixed Volatiles and Metamorphism

30 August. Buffers and experimental techniques (A. Muan, chairman): Discussants: M. Sato, J. Munoz, G. Skippen, P. Roedder, R. Vidale, G. Ulmer, and S. Huebner. H. P. Eugster, "Review of buffer theory and methods"; J. Frantz, "Buffering of HCl fugacities and control of *p*H at elevated temperatures and pressures"; J. Lewis, "Lithosphere-atmosphere buffer reactions on Venus." Fluid inclusion studies (E. Roedder, chairman): Discussants: H. Stalder, P. Ypma, H. D. Holland, H. Barnes, J. Touret. B. Poty, and A. Weisbrod, "Fluid inclusions in quartz veins from greenschist facies: Alps and Massif Central, France."

31 August. Experimental phase equilibrium studies (H. G. F. Winkler, chairman): Discussants: J. Hemley, D. Hewitt, T. Gordon, S. W. Richardson, W. Johannes, T. Peters, and E. Althaus. P. Metz, "Metamorphic reactions in siliceous dolomites"; P. Orville, "The composition of plagioclase as an indicator of metamorphic grade *and* fluid composition in carbonate-bearing pelitic rocks"; M. Rutherford, "Iron-bearing pelitic rocks."

1 September. Field investigations (H. James, chairman): Discussants: D. Coombs, D. Wones, B. Morgan, M. Frey, V. Wall, C. V. Guidotti, and N. Chatterjee. D. M. Kerrick, "Roof pendants in the Sierra Nevada, California"; V. Trommsdorff, "Mixed volatile reactions in the ultramafics-marble association of the Alps"; D. Carmichael, "Mixed-volatile equilibria in greenschist and amphibolite facies rocks in south-eastern Ontario."

2 September. Thermodynamics and theory (J. B. Thompson, Jr., chairman): Discussants: K. Krauskopf, A. Nigrini, C. W. Burnham, and E-an Zen. E. U. Franck, "Water as a solvent at high temperature and pressure"; H. J. Greenwood, "Change of variable in Redox reactions to T-X diagrams in H_2-H_2O"; H. Helgeson, "Theoretical prediction of the thermodynamics of metamorphic reactions in mixed volatile systems"; T. Brown, "Equilibrium and mass transfer in the metasomatism of siliceous limestones and dolomites."

3 September. Active natural systems (D. E. White, chairman): Discussants: A. J. Ellis, A. Truesdell, I. Barnes, Y. Seki, and Y. Oki. R. Fournier and P. Muffler, "Near-surface metamorphism in geothermal regions."

Glassy State

Morton E. Milberg, chairman; A. R. Cooper, vice chairman.

Ionic Transport Phenomena in Glass

28 June. H. Sato, "Cation diffusion and conduction in disordered systems"; Z. Boksay, "The activation processes involved in the migration of ions in glass"; D. K. Hale, "Transport and diffusion of alkali metal ions in glass."

29 June. H. DeWaal, "A model to describe internal friction in glasses"; R. H. Doremus, "Internal friction in glass"; P. B. Macedo, "Comparison between mechanical and electrical ionic relaxations in silicate glasses"; D. E. Day, "Mechanical relaxations and alkali ion movement in glass."

30 June. G. H. Frischat, "Transport properties of ion-exchanged glasses"; J. D. Mackenzie, "High pressure and other volumetric effects on ionic conduction in glasses"; O. V. Mazurin, "Electrical properties of phase-separated glasses."

1 July. R. J. Charles, "Electrode polarization by electrolytic dissociation in glasses"; J. L. Barton, "High-field conductivity in glass"; L. L. Hench, "Kinetics of reactions at the physiological interface of glass and glass ceramics."

2 July. Brief contributions.

Heterocyclic Compounds, Chemistry of

David Lemal, chairman; Walter Lwowski, vice chairman.

2–6 August. A. Anastassiou, "The heteronins"; K. Heusler, "Structural modification of the penicillins"; E. T. Kaiser, "Are intermediates formed in reactions at sulfur in cyclic sulfonate and sulfate esters?"; J. M. Lehn, "Cryptates: a new class of organic cation complexes"; A. Padwa, "Photo and thermal processes in the diazabicyclic series"; R. E. Schultes, "The botany and chemistry of hallucinogenic plants"; A. I. Scott, "Biogenetic-type synthesis of nitrogenous heterocycles"; P. R. Story, "Cyclic peroxides. Synthesis of large and small rings"; B. M. Trost, "Fragmentation reactions of sulfur heterocycles"; I. K. Ugi, "Molecules with non-rigid skeletons—BPR, TR, and conformational transformations"; P. Yates, "Heterocycles from α-diazo ketones"; A. I. Meyers, "The synthesis of di-hydro-1,3-oxazines"; F. McCapra, "Proteins in bioluminescence"; S. Hünlig, "Heterocyclic redox systems and stable radical cation"; E. Vogel, "Bridged [14] annulenes."

Hormone Action

Jay Tepperman, chairman; G. R. Wyatt, vice chairman.

9 August. Insulin: structure-function relationships and hormone-receptor interactions (P. Cuatrecasas, session chairman): J. Roth, F. Carpenter, J. Rupley, E. Arquilla, G. Dodson, T. Kono, and D. Lockwood. Proinsulin (D. F. Steiner, session chairman).

10 August. Hormonal control of development and function of mammary gland (Y. Topper, session chairman): G. Sato and K. S. McCarty. Hormonal control of spermatogenesis (I. Fritz, session chairman): Y. Clermont, R. W. Bruce, and A. Means.

11 August. Estrogen and progesterone

interaction with the nucleus and chromosomal components (B. W. O'Malley, session chairman): T. C. Spelsberg, T. H. Hamilton, and E. E. Baulieu. Androgens: horomone-receptor interactions and role in differentiation (J. D. Wilson, session chairman): W. I. P. Mainwaring.

12 August. Mechanism of action of glucocorticoids (P. Feigelson, session chairman): J. Loeb and C. Sekeris. Cyclic AMP dependent protein kinase(s) (E. G. Krebs, session chairman).

13 August. Mechanism of action of TSH (J. Field, session chairman). Mechanism of action of ACTH (L. Garren, session chairman).

Hydrocarbon Chemistry

Henry C. Stevens, chairman; Paul G. Gassman, vice chairman.

19 July. (P. Gassman, discussion leader): S. Cristol, "Multiple reaction paths for electrophilic additions to olefins and cyclopropanes"; A. Cairncross, "The effect of 7-substituents on tropilidene-norcaradiene equilibria"; P. Schleyer, "Insights concerning carbonium ions provided by theoretical calculations."

20 July. (H. Ulrich, discussion leader): R. Huisgen, "Recent developments in the chemistry of 2 + 2 cycloadditions"; L. Ghosez, "Cycloadditions of activated ketenes, keteneimines and keteneiminium salts." (H. Stevens, discussion leader): P. Bartlett, "Stereochemistry of some cycloadditions."

21 July. (H. Simmons, discussion leader): K. Wiberg, "Strained hydrocarbons"; L. Salem, "The electronic properties of 1,2-, 1,3- and 1,4-diradicals." (H. Ward, discussion leader): H. Roth, "Photo-induced nuclear spin polarization"; J. Rakshys, "^{19}F CIDNP and application to alkyl halide-alkyllithium reactions."

22 July. (E. Eliel, discussion leader): J. Oth, "Radical anions and dianions of annulenes"; J. Roberts, "Conformational equilibration as studied by nmr." (K. Mislow, discussion leader): E. Heilbronner, "Photoelectron-spectra of mono- and polycyclic hydrocarbons."

23 July. (C. Walling, discussion leader): E. Huyser, "Mechanisms of peroxide reactions"; M. Poutsma, "Radical addition reactions of vinylacetylenes."

Inorganic Chemistry*

Ralph J. Bertolacini, chairman; John K. Ruff, vice chairman.

2–6 August. Chemistry in aqueous systems (J. W. Cobble, session chairman): R. E. Connick, "First coordination spheres of aquo ions"; G. P. Haight, Jr., "Deducing the chemistry of active intermediates, such as aqueous Mo (IV), Mo (V), Cr (IV), and Cr (V)"; R. S. Tobias, "The stability, structure, reactions, and applications of organo-metallic ions in aqueous solutions"; J. M. Wood, "A report: mechanisms for methyl transfer to mercury"; Henry Taube, "A report: some new aquo ions of rhodium and molybdenum"; J. W. Cobble, "A report: new aqueous ions of nitrogen: ortho nitrate and ortho nitrite." Transition metal compounds with unusual properties (Robert McCarley, session chairman): Richard Walton, "Reactions of transition metal halides and oxyhalides of the early transition metals"; Henry Gehrke, Jr., "Chemistry of rhenium (IV) and (V) chlorides: solvent behavior and solution chemistry"; J. E. Fergusson, "Some recent advances in the chemistry of intermediate oxidation states of rhenium"; Robert McCarley, "Unusual oxidation states and metal cluster species of niobium, tantalum, and tungsten"; Herbert Kaesz, "A new type of intramolecular aromatic substitution product for transition metal complexes; $(C_5H_5)(CO)\overline{Mo\text{-}\mu\text{-}C_5H_4\text{-}Mn}(CO)_4$ and related derivatives." Instrumental methods for identifying inorganic species (Andrew Timnick, session chairman): Norman Greenwood, "Mössbauer spectroscopy for elements other than iron and tin"; David Hercules, "Electron spectroscopy for chemical analysis"; Frederick Grimm, "Photoelectron spectroscopy"; T. W. Haas, "Low energy electron diffraction and auger spectroscopy"; G. N. LaMar, "Nuclear magnetic spectroscopy"; Walter McCrone, "Sleuthing with the microscope."

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Inorganic Phosphors, Chemistry and Physics of

Henry L. Stadler, co-chairman; T. Y. Tien, co-chairman; R. L. Hickok, vice chairman.

12 July. Activated oxide phosphors I. Rare earth activated phosphors (F. C. Palilla, discussion leader): L. G. VanUitert, "Self quenching and energy transfer interactions among rare earth ions in tungstates"; J. D. Kingsley, "Efficiencies of rare earth activated phosphors." Efficiency (H. W. Moos, discussion leader): M. J. Weber, "Radiative decay of rare earth ions in crystals"; L. A. Riseberg, "Multiple phonon interactions"; G. F. Imbusch, "Radiative and non-radiative decay" of transition metal ions in crystals."

13 July. Halophosphates (F. A. Hummel, discussion leader): W. W. Piper, "Review of EPR as a tool to study defects in halophosphates"; E. R. Kreidler, J. A. Parodi, T. S. David, and T. F. Soules, "Antimony activated halophosphates"; E. A. Dale, M. B. Thomas, and K. H. Butler, "Kinetics of calcium halophosphate phosphor formation." Activated oxide phosphors II. Transition metal activated phosphors (H. F. Ivey, discussion leader): L. L. Lohr, "Electronic structure of transition metal ions in crystals"; D. T. Palumbo, "Spectra of $3d^5$ ions in luminescent materials"; F. M. Ryan, "Optical studies of manganese ions in calcium and strontium halophosphates."

14 July. Sulfides (A. L. Smith, discussion leader): W. Lehman, "CaS and related phosphors"; F. F. Mikus, "Luminescence in the system ZnS-CdS." Oxysulfides (M. R. Royce, discussion leader): P. N. Yocum, "Synthesis and energy efficiency of the oxysulfide phosphors"; R. A. Buchanan, "Energy transfer processes in the oxysulfide phosphors"; C. Struck, "Crossover relaxation of rare earth activators in the oxysulfide phosphors."

15 July. Antistokes phosphors (R. L. Hickok, discussion leader): R. A. Hewes, "Multi-photon excitation and efficiency in the Er^{3+}-trivalent rare earth ions (Ho^{3+}, Er^{3+}, and Tm^{3+}) system"; R. K. Watts, "Energy conversion and rare earth phosphors"; F. W. Ostermayer, "Stepwise and cooperative excitation of some rare earth ions via energy transfer"; F. E. Williams," "Trends in phosphor research."

16 July. Energy transfer (discussion leader to be announced): R. L. Orbach, "Simple physical picture of energy transfer process"; J. P. Van der Ziel, "Some experimental aspects of energy transfer."

Interfaces, Chemistry at

Frederick M. Fowkes, chairman; Paul Becher, vice chairman.

12 July. (R. R. Stromberg, chairman): G. Schay, "Adsorption from solution"; T. Fort, Jr., "Adsorption on metals"; D. W. Fuerstenau, "Basic phenomena in ionic adsorption."

13 July. (A. C. Zettlemoyer, chairman): R. M. Barrer, "Diffusion and adsorption in molecular sieves"; K.

Klier and A. C. Zettlemoyer, "Water at solid surface"; G. L. Haller, "Adsorption on single crystals by internal reflection spectroscopy."

14 July. (E. J. Clayfield, chairman): D. Langbein, "van der Waals attraction between solids"; V. A. Parsegian, "Simple methods of calculation of van der Waals interactions via the Lifshitz approach." (Speaker and subject to be announced)

15 July. (E. D. Goddard, chairman): R. S. Porter, "Structure and thermodynamics of liquid crystals"; J. Adams, "Electric and magnetic field effects in liquid crystals"; S. G. Mason, "Effects of electric fields on suspensions."

16 July. (Paul Becher, chairman): Contributed papers.

Ion Exchange

Robert E. Anderson, chairman; David H. Freeman, vice chairman.

23 August. G. E. Boyd, "Laser Raman spectroscopy applied to ion exchange resins"; A. S. Kertes, "Thermodynamics of liquid ion exchangers"; J. R. Millar, "Kinetics of weak-base resins"; H. D. Sharma, "Kinetics in mixed solvent systems."

24 August. D. E. Weiss, "Biological membranes"; H. A. Saroff, "Clusters of ionizable groups as binding sites in macromolecules"; P. C. Mangelsdorff, "Difference chromatography"; H. Small, "Hydrodynamic chromatography."

25 August. D. H. Freeman, "Hydrogen bond liquid chromatography"; A. Clearfield, "Ion exchange selectivities in zirconium phosphates"; J. T. Kummer, "Ion exchange properties of β and β'' "alumina."

26 August. I. H. Spinner, "Reciprocating ion exchange"; R. M. Wallace, "Separations with ion exchange membranes"; C. Calmon, "Dynamic polymers."

27 August. J. Block, "Use of ion exchange resins to form inorganic microspheres"; N. H. Sweed, "Parametric pumping." (Discussion leaders to be announced.)

Laser Interaction with Matter

Arthur H. Guenther, chairman; Richard K. Osborn, vice chairman.

23 August. Status of high power lasers (Keith Boyer, discussion leader): A. Glass, "High power solid state pulsed lasers"; A. Hill, "High power pulsed CO_2 lasers"; A. J. Beaulieu, "High power continuous wave CO_2 lasers." Ray Kidder, "Status of Livermore high power laser development." Laser induced gas breakdown (John Alcock, discussion leader): C. Grey Morgan, "General theory of breakdown"; R. Popular, "Initial stages of gas breakdown"; G. Canavan, "Theory of air breakdown at 10.6 microns"; A. J. Alcock, "Gas breakdown experiments at NRC." R. K. Osborn, "Atomic ionization by intense laser fields."

24 August. Nonlinear effects in overdense plasmas (Ray Kidder, discussion leader): H. Hora, "Nonlinear force and absorption"; M. V. Goldman, "Field dependent transport coefficients near the reflection point"; A. Caruso,

Program Summary, Gordon Research Conferences for 1971

	Colby Junior College New London, N.H.	New Hampton School New Hampton, N.H.	Kimball Union Academy Meriden, N.H.
14–18 June	Biology of Milk	Magnetic Resonance	Cyclic AMP
21–25 June	Nuclear Chemistry	Structural Macromolecules: Mucopolysaccharides	Cell Structure and Metabolism
28 June–2 July	Catalysis	Statistics in Chemistry and Chemical Engineering	Chemistry, Physiology and Structure of Bones and Teeth
5–9 July	Textiles	Coal Science	Enzymes, Coenzymes and Metabolic Pathways
12–16 July	Chemistry and Physics of Inorganic Phosphors	Radiation Chemistry	Chemistry at Interfaces
19–23 July	Elastomers	Organic Reactions and Processes	Proteins
26–30 July	Corrosion	Chemistry and Physics of Solids	Crystal Growth
2–6 Aug.	Polymers	Inorganic Chemistry	Toxicology and Safety Evaluations
9–13 Aug.	Medicinal Chemistry	Analytical Chemistry	Hormone Action
16–20 Aug.	Separation and Purification	Chemistry and Physics of Cellular Materials	Lipid Metabolism
23–27 Aug.	Cancer	Science of Adhesion	Ion Exchange
30 Aug.–3 Sept.	Energy Coupling Mechanisms	Environmental Sciences: Air	Chemistry of Molten Salts

* Weeks not available

"Anomalous reflection and refraction." H. Pepin, "Pulsed CO_2 interaction with solid targets." Laser produced plasmas (solid) (J. L. Tuck, discussion leader): J. Shearer, "Recent solid target laser experiments at LRL"; K. Boyer, "Status of Los Alamos program"; G. Gobeli, "Status of Sandia program"; S. Dean and J. Stampler, "Laser produced plasmas at Naval Research Laboratory." P. Mallozzi, "Laser interaction with high Z targets."

25 August. Thermonuclear fusion (Abe Hertzberg, discussion leader): N. G. Basov, "Status of Russian efforts"; F. Floux, "Status of French efforts"; M. Lubin, "Laser plasmas for inertially confined controlled thermonuclear fusion"; P. Mulser, "Status of German efforts." Laser plasma diagnostics (Albert Engelhardt, discussion leader): G. V. Sklizkov, "Plasma temperature evaluations"; F. Johoda, "Optical diagnostic techniques"; S. Ramsden, "Diagnostics of high density plasmas." David Bach, "Study of the interaction of ruby laser light with the lithium plasmas"; W. K. Pendleton, "Holography of laser induced breakdown in low pressure deuterium."

26 August. Laser heating of existing plasmas (John Dawson, discussion leader): A. Alstrom, "Laser heating of theta pinches"; J. L. Bobin, "Laser heating of dense plasma focus"; J. Martineau, "CO_2 heating of inhomogeneous plasmas." A. Engelhardt and V. Tuck, "High power CO_2 heating of theta pinch." Magnetically confined laser plasmas (N. G. Basov, discussion leader): G. Vlases, "General considerations of laser heating of magnetically compressed plasmas"; J. Dawson, "10.6 μ laser heating of magnetically confined plasmas"; F. Tonon, "Magnetically confined deuterium plasmas." H. Schwarz, "Influence of magnetic fields on laser induced plasmas on thin and thick targets."

27 August. Material response to lasers (Pete Avizonis, discussion leader): E. D. Jones and N. Anderholm, "Hydrodynamic behavior of laser interactions with solids"; R. R. Alfano and S. L. Shapiro, "Picosecond studies." (Dick Osborn, discussion leader): C. Yamanaka, "Laser produced high intensity and high temperature plasmas." Summary panel discussion. Summary and discussions of the status of laser interaction and suggested experiments and development of diagnostics and laser sources.

Lipid Metabolism

John H. Law, chairman; Erwin H. Mosbach, vice chairman.

16 August. (David Silbert, chairman): C. F. Fox, "Membrane biosynthesis"; P. Overath, "Fatty acid function and metabolism in bacteria." (David C. White, chairman): H. R. Kaback, "Sugar and amino acid transport mechanisms as studied in isolated bacterial membrane vesicles"; W. J. Lennarz, "Studies on the membranes of bacilli."

17 August. (A. C. Chibnall, chairman): J. C. Dittmer and T. S. Meehan,

"The biosynthesis of hydrocarbons from fatty acids in *Sarcina lutea*"; P. E. Kolatukudy, "Biosynthesis of alkanes in plants." (Armand J. Fulco, chairman): Konrad Bloch, "Fatty acid synthetase of *Mycobacterium phlei*"; P. R. Vagelos, "Studies on the biosynthesis of lipids."

18 August. (Howard Goldfine, chairman): Fred L. Snyder, "Enzymic synthesis of O-alkyl lipids and plasmalogens"; A. K. Hajra, "Biosynthesis of ether bonds in lipids." (Frederick Kuehl, chairman): J. D. Corbin, "Cyclic AMP-dependent protein kinase activation of adipose tissue lipase"; Daniel Steinberg, "Purification and kinase-dependent activation and phosphorylation of hormone-sensitive lipase."

19 August. (Allan Munck, chairman): Herbert Röller, "Juvenile hormone and the programming of postembryonic development"; Jack Gorski, "Hormone interactions with target tissues." (Frederick E. Regnier, chairman): Frederick E. Regnier, "Insect pheromones." (Lawrence Jackson, discussion leader).

20 August. (E. H. Mosbach, chairman): G. J. Schroepfer, Jr., "Recent mechanistic studies in cholesterol biosynthesis"; H. F. DeLuca, "Recent advances in the metabolism and function of Vitamin D."

Liquids, Chemistry and Physics of

Benjamin Widom, chairman; Jan V. Sengers, vice chairman.

16 August. (R. Bearman, session chairman): J. A. Barker, "PY theory and equation of state"; L. Verlet, "Computer experiments on classical fluids"; G. Stell, "Thermodynamic perturbation theory." (M. S. Green, session chairman): H. J. Raveche, "Theory of the triplet correlation function"; P. A. Egelstaff, "Measurement of the triplet correlation function."

17 August. (M. Nelkin, session chairman): R. Zwanzig, "Non-linear effects in hydrodynamics"; T. Wainwright, "Velocity autocorrelation at long times." (J. P. McTague, session chairman): N. Bloembergen, "Stimulated Rayleigh and Brillouin scattering in liquids"; P. Fleury, "Intermolecular light scattering in fluids."

18 August. (B. Berne, session chairman): B. Stoicheff, "Shear waves in liquids"; R. Pecora, "Spectrum of depolarized scattered light." (R. L. Scott, session chairman): W. B. Streett, "Phase equilibria in fluid mixtures at high pressures"; J. S. Rowlinson, "Perturbation theories of liquid mixtures."

19 August. (H. A. Kierstead, session chairman): J. M. H. Levelt-Sengers, "Asymptotic symmetry at the critical point"; H. Meyer, "Chemical potential in the two-phase region." (G. S. Rushbrooke, session chairman): H. Schmidt, "Constant-volume heat capacity"; L. P. Kadanoff, "Dynamical phenomena in the critical region"; W. Goldburg, "Exponent renormalization"; M. Bouchiat, "Interfacial critical phenomena."

20 August. (Session chairman to be announced): M. Stephen, "Theory of liquid crystals"; R. B. Meyer, "Experiments on liquid crystals."

Magnetic Resonance

Daniel Kivelson, chairman; Erwin L. Hahn, vice chairman.

14 June. (J. H. Freed, session chairman): J. Jonas "NMR studies of molecular motions in liquids under high pressures"; H. Carr, "NMR studies in liquid xenon"; J. M. Deutch, "Theory of spin relaxation in fluid systems." (P. A. Pincus, session chairman): G. W. Clark, "Nuclear spin-lattice relaxation in nematic liquid crystals"; L. C. Snyder and S. Meiboom, "Molecular structure developments in NMR of molecules oriented by liquid crystals."

15 June. (E. L. Hahn, session chairman): R. R. Ernst, "Fourier spectroscopy techniques in high resolution NMR"; R. Freeman, "Spin echo spectroscopy"; J. S. Waugh, (subject to be announced). (M. L. El-Sayed, session chairman): J. Schmidt, "Transient resonance effects in phosphorescent triplets"; L. M. Mollenauer, "Optical pumping and spin resonance of the relaxed excited state of the F-center."

16 June. (H. C. Wolf, session chairman): I. Solomon, "Spin-dependent transport phenomena in semi-conductors"; I. J. Lowe, "Spin diffusion in solids"; P. S. Allen, "An investigation of methyl group internal rotation in solids." (S. Weissman, session chairman): P. W. Atkins, "Transient ESR emission spectra in solution"; R. Livingston, "ESR studies of short-lived radicals prepared by photolysis of liquids."

17 June. (G. L. Closs, session chairman): L. J. Oosterhoff, "Spin exchange in collisions between odd electron molecules"; F. J. Adrian, "Role of diffusion controlled reaction in chemically induced nuclear spin polarization." (K. Hausser, session chairman): M. Bloom, "Nuclear spin symmetries and relaxation in molecular gases and solids"; K. Crowe, "Use of Mu mesons for nuclear magnetic spectroscopy."

18 June. (M. P. Klein, session chairman): R. H. Sands, "Iron, sulphur, spinach, and rubble; ENDOR and Mössbauer spectrometry on ferredoxins"; D. J. Katz and H. L. Crespi, "High resolution magnetic resonance studies on isotope hybrid proteins."

Medicinal Chemistry

Irwin J. Pachter, chairman; Clement A. Stone, vice chairman.

9 August. Immunology of complement: H. J. Müller-Eberhard, "Chemical and immuno-chemical aspects of the complement sequence"; C. G. Cochrane, "In vivo inhibition of the complement sequence"; K. F. Austen, "Immunobiology of complement in man."

10 August. Brain amines and behavior: K. E. Moore, "Experimental approaches in laboratory animals"; Joseph J. Schildkraut, "Norepinephrine metabolism, psychotropic drugs and affective disorders"; (speaker to be announced), "Serotonin and behavior"; (speaker to be announced), "Dopa and Parkinsonism."

11 August. Theoretical chemistry and drug design: A Cammarata, R. Christofferson, J. Green, R. Harmon, J. Ostrenga, and W. Purcell, "New work on the correlation of electronic structure and physiochemical parameters with biological activity"; M. Gorman, "Chemistry and biological activities of β-Lactam antibiotics."

12 August. Hypothalamic releasing hormones: R. Burgess, "Chemistry of hypothalamic releasing hormones"; H. A. J. Kastin, "Effects of hypothalamic releasing hormones in man"; V. L. Gay, "Kinetics of gonadotropin release"; J. A. Clemens, "Central nervous system regulation of LH and prolactin secretions."

13 August. New developments in drug therapy.

Microbiological Degradation

Ellis B. Cowling, co-chairman; John A. Troller, co-chairman.

19 July. Biodegradability of materials (R. E. Klausmeier and B. D.

Church, session chairmen): R. L. Bunch, "General concepts, criteria and measurement of biodegradability"; H. O. Halvorson, "Microbial degradation of liquid wastes via extended aeration." (O. Wyss, session chairman): K. Jarl, "The symba yeast process—a method for fermentation of waste starch materials to a useful product."

20 July. Degradation of lignin and other refractory materials (E. B. Cowling, session chairman): T. K. Kirk, "Biological degradation of lignin"; D. A. Kline, "Physical treatments to increase the biodegradability of refractory materials." (A. Kaplan, session chairman): D. M. Wiles, "Effect of sunlight on the biodegradability of polymeric materials."

21 July. (Z. J. Ordal, session chairman); W. E. C. Moore, "Conventional microbial taxonomy"; W. R. Lockhardt, "Numerical microbial taxonomy." (E. B. Cowling, session chairman): L. D. Dwinnell, "Information retrieval for microbiologists."

22 July. (J. A. Troller, session chairman): M. Rogoff, "Bacterial insecticides"; J. L. Vaughn, "Viral insecticides." (E. B. Cowling, session chairman): S. A. Richardson, "Preservation of ancient buildings."

23 July. (B. D. Church, session chairman): D. I. Fennell, "Viral infections of fungi."

Milk, Biology of

Stuart Patton, co-chairman; Robert Jenness, co-chairman.

14 June. (Stuart Patton, discussion leader): R. G. Saacke, "Histology and cytology of the mammary gland"; T. W. Keenan, "Membranes of the mammary cell"; Takami Oka, "Hormonal interactions on mouse mammary gland development and differentiation." (B. L. Larson, discussion leader): S. Nandi, "Analyses of factors influencing mammary neoplasia in mice"; H. A. Tucker, "Cortisol binding in mammary cells."

15 June. (Mark Keeney, discussion leader): A. K. Lough, "Digestion and assimilation of lipids in ruminants"; D. L. Puppione, "Influence of lactation on serum lipoprotein distribution"; E. F. Annison, "Mammary uptake of blood triglycerides in relation to milk fat synthesis." (Stuart Patton, discussion leader): A. K. Lough, "Aspects of the chemistry and biochemistry of phytanic acid"; D. M. Paige, "Lactose intolerance and milk rejection."

16 June. Evolution of lactation (Robert Jenness, discussion leader and introductory comments): W. R. Morrison, "Milk phospholipids of various species"; D. E. Bauman, "Comparative aspects of the synthesis of milk fat"; R. L. Baldwin, "Comparative enzymology of mammary tissue." (R. L. Baldwin, discussion leader): Raymond Dils, "Chain length control in the synthesis of milk fatty acids"; Mark Keeney, "Rumen microbial influences on milk fatty acids."

17 June. (M. P. Thompson, discussion leader): H. M. Farrell, "Origin and structure of the casein micelle"; E. B. Kalan, "Primary structure of milk proteins"; R. E. Townsend, "Conformation studies on whey proteins." (Robert Jenness, discussion leader): K. E. Ebner, "Lactose synthetase."

18 June. (R. G. Saacke, discussion leader): J. L. Linzell, "Mechanisms of milk secretion"; Stuart Patton and B. L. Larson, "The lactating mammary cell as an approach to basic biological problems."

Molecular Pathology

Russell Ross, chairman; David Korn, vice chairman.

The Macrophage

12–16 July. "Monocyte and macrophage"; "Origin and turnover of macrophages"; "Macrophage"; "Promonocyte"; "Physiology and metabolism"; "Plasma membrane properties of the macrophage"; "The macrophage and the immune response"; "The macrophage and inflammation"; "Antimacrophage serum." (Partial list of speakers: Dorothy F. Bainton, Ralph Van Furth, R. J. North, V. Defendi, Z. Cohn, Manfred Karnovsky, J. G. Hirsch, S. Klebanoff, M. J. Cline, Michele Rabinowitz, B. G. Mackaness, J. Goodman, Emil Unanue, Walter Spector, Russell Ross, S. Gordon, Peter Ward, M. Fishman, V. Nussenzweig, and S. Silverstein.)

Molecular Pharmacology

A. S. V. Burgen, chairman; Robert T. Schimke, vice chairman.

5 July. Conformations of drugs. I. Acetylcholine and its congeners (A. S. V. Burgen, discussion leader): P. Pauling, "X-ray crystallography"; J. Feeney, "NMR analysis"; L. B. Kier, "Extended Huckel calculations"; E. Reich, "Model building." II. Pharmacologically important peptides (O. Jardetzky, discussion leader): W. Gibbons, "Gramicidin"; G. C. R. Roberts, "Vasopression and oxytocin"; C. Fromageot, "Angiotensin."

6 July. Drug receptors. I. Acetylcholine (B. Belleau, discussion leader): H. P. Rang, "Acetylcholine receptors, functional studies"; A. Karlin, "Chemical features of acetylcholine receptors"; J. P. Changeux, "Receptor properties of separated cell components. II. Other receptors (E. Reich, discussion leader): L. Aronow, "Corticoid binding protein in L cells"; F. R. Dastoli, "Taste receptive proteins"; M. Nomura, "Ribosomal drug receptors"; J. C. Metcalfe, "Lipids as drug receptors"; A. Goldstein, "Narcotic binding protein."

7 July. Drugs and cellular control mechanisms. I. Regulation of protein synthesis (R. T. Schimke, discussion leader): D. Nebert, "Regulation of mixed function oxygenase induction in cell culture"; R. D. Palmiter, "Estrogen regulation of specific protein synthesis in chick oviduct"; S. Snyder, "Regulation of putrescine synthesis in proliferating tissues." II. Regulation of protein degradation (F. T. Kenney, discussion leader): A. Goldberg, "Regulation of protein turnover in *Escherichia coli*"; A. Grossman, "Regulation of tyrosine transaminase inactivation in liver"; J. Bertino, "Effects of folate antimetabolites on the regulation of folate reductase."

8 July. Proteins (G. Nemethy, discussion leader); E. Reich, "Protein toxins"; S. Bourgeois, "Specificity of lac-repressor"; F. W. Richards, "S peptide, S protein interactions"; C. B. Anfinsen, "Protein folding"; O. Jardetzky, "Protein folding." Cyclic AMP I. (S. E. Mayer, discussion leader): E. Krebs, "Effects on protein kinases"; H. Rasmussen, "Interrelationships with ions and ion transport."

9 July. Cyclic AMP II. (H. Rasmussen, discussion leader): S. E. Mayer, "Cyclic AMP and the cardiac inotropic effect"; T. W. Rall, "Effects on CNS metabolism"; F. Bloom, "Effects on neuronal activity"; J. T. Bonner, "Cyclic AMP and the organization of slime molds."

Molten Salts, Chemistry of

G. Pedro Smith, chairman; Samuel J. Yosim, vice chairman.

30 August. (J. Braunstein, discussion leader): W. R. Grimes, "Chemical behavior of the molten salt reactor experiment"; L. M. Toth, "Stability and the effect of solvent on dilute U(III)–U(IV) mixtures in solution in molten fluorides." (M. Blander, discussion leader): P. E. Field, "Physical interactions of gases in ionic melts"; S. Cantor, "Chemical interactions of BF_3 and other gases in fluoride melts."

31 August. (R. W. Laity, discussion leader): K. Singer, "Monte Carlo simulation of liquid alkali halides"; J. E. Lind, Jr., "The effect of the internal Coulomb field on the structure of molten salts." (O. J. Kleppa, discussion leader): "Some very recent advances"; (speakers to be announced).

1 September. (N. H. Nachtrieb, discussion leader): B. R. Sundheim, "Rotational relaxation times from EPR, NMR, and phosphorescence measurements"; K. Tödheide, "The electrical conductance of molten salts at high pressures in the sub- and supercritical temperature range." (J. H. R. Clarke, discussion leader): G. H. Wegdam, "Short-time development of some physical properties of molten salt systems"; V. A. Maroni, "Raman studies of some binary molten salt systems."

2 September. (R. E. Hester, discussion leader): D. W. James, "Raman scattering from disordered ionic solids and their melts"; G. E. Boyd, A. S. Quist, J. B. Bates, and M. H. Brooker, "Discussion of Raman spectroscopy of molten fluorides." (H. A. Øye, discussion leader): D. M. Gruen, "The chemistry of sulfur in fused salts"; N. J. Bjerrum, "Lower oxidation states of sulfur, selenium, and tellurium in melts containing aluminum chloride."

3 September. (F. Lantelme, discussion leader): R. A. Osteryoung, "Application of a computer-based pulse polargraphic system to molten salt studies"; G. Mamantov, "Hg_3^{2+}: a new subvalent mercury ion in acidic molten chloroaluminates."

Natural Products

Hans Muxfeldt, chairman; David R. Dalton, vice chairman.

2–6 August. The following persons have been invited to speak: D. Arigoni, R. Breslow, W. Chan, C. H. Heathcock, J. B. Hendrickson, W. S. Johnson, R. C. Kelly, E. Leete, M. Ohashi, K. Nakanishi, R. B. Woodward, and S. M. Kupchan.

Nuclear Chemistry

Thomas T. Sugihara, chairman; H. Marshall Blann, vice chairman.

21–25 June. Central theme will be nuclear spectroscopy. Spectroscopy by $xn\gamma$ reactions. Coriolis mixing, negative-parity states. Effective nucleon charge, multiparticle states. Transition moments, band mixing, Coulomb excitation. Nuclei off the beta stability line, light nuclei. Proton radioactivity, delayed proton emission. Advances in experimental techniques, precision gamma-ray spectrometry. Hyperfine interactions, perturbed angular correlations, excited-state magnetic moments. Spectroscopy with the next generation of accelerators. Subjects of broad interest: nuclear chemistry and the environment, a review of the past and prospects for the future in nuclear chemistry. (Speakers to be announced.)

Nuclear Structure Physics

Francis G. Perey, chairman; Joseph B. McGrory, vice chairman.

26 July. C. M. Vincent, "Single nucleon transfer to unbound states"; T. W. Elze, "Single nucleon transfer in actinide elements"; O. Hansen, "Two nucleon transfer reactions experimental review"; R. M. Drisko, "Analysis of multinucleon transfer reactions."

27 July. (John P. Schiffer, chairman): Richard Schaffer, "Exchange effects in nuclear reactions"; P. G. Roos, "Charge exchange reactions." P. W. Keaton, Jr., "Polarization phenomena: an overview"; E. G. Bilpuch, "High resolution scattering measurements."

28 July. J. X. Saladin, "New results in coulomb excitation measurements"; D. B. Fossan, "Perturbed angular correlation"; (speaker to be announced), "New element identification"; R. H. Siemssen, "Heavy ion elastic scattering."

29 July. (Akito Arima, chairman): V. Gilet, "Heavy ion reactions and quartet structure"; R. Middleton, "Transfer reactions with heavy ions." (Speaker to be announced), General interest speaker.

30 July. H. M. Blann, "Heavy ion reaction mechanisms"; (speaker to be announced), "Studies of the valley of stability using heavy ions."

Nucleic Acids

Lawrence Grossman, co-chairman; Waclaw Szybalski, co-chairman; Harrison Echols, co-vice chairman; Robert Haselkorn, co-vice chairman.

12 July. S. Linn, "Nucleases"; F. Bollum, "DNA replication: mechanisms, enzymology; origin and orientation."

13 July. R. Setlow, "DNA repair: mechanisms, enzymology"; P. Howard-Flanders, "DNA repair: uvr, rec, fec, nep, rep, red, int, xis . . . functions." Summaries of Monday and Tuesday sessions and general discussion.

14 July. Parallel workshop sessions. Session I: D. Morse, "Bacterial transcription"; W. Szybalski, "Phage transcription (lambdoid phages)." Session II: A. Rich, "tRNA conformations"; D. Brown, "Polynucleotide synthesis."

15 July. Parallel workshop sessions. Session I: W. C. Summers, "Phage transcription (virulent phages)"; H. Echols, "Polymerase modifications and DNA recognition sites." Session II: P. Fellner, "Nucleic acid sequencing"; R. Shapiro, "Chemical modifications and mutagenesis."

16 July. Summaries of Wednesday and Thursday workshops. Participants who would like to present their data should mail a 100 to 200-word abstract to the chairmen.

Operations Research and Management Science

Richard E. Colgate, chairman; Franz Edelman, vice chairman.

9 August. George Dawkin, "A broad look at simulation"; Ward Edwards, "Psychological aspects of decision theory."

10 August. Application of Baysian decision theory (Irv Gross, discussion leader): Ted Gordon, "Technological forecasting."

11 August. Chandler H. Stevens, "Philosophical aspects of decision making"; Richard O. Mason, "Corporate long range planning."

12 August. H. O. Hartley, "Nonlinear programming"; Russell W. Peterson, "Management science and government operation."

13 August. Milton Godfrey, "Economic model and input—output."

Organic Photochemistry

Paul J. Kropp, chairman; Nicholas J. Turro, vice chairman.

19 July. (G. S. Hammond, discussion leader): L. J. Oosterhoff. (D. M.

Lemal, discussion leader): E. F. Ullman.

20 July. (N. C. Yang, discussion leader): W. R. Ware. (D. G. Whitten, discussion leader): R. Bersohn.

21 July. (N. J. Turro, discussion leader): P. M. Rentzepis; K. H. Drexhage. (H. E. Zimmerman, discussion leader): R. L. Letsinger,

22 July. (G. M. Wyman, discussion leader): H. Morrison. (O. L. Chapman, discussion leader): P. J. Wagner.

23 July. (K. Schaffner, discussion leader): A. Padwa; J. Saltiel.

Organic Reactions and Processes

David S. Breslow, chairman; Robert W. Murray, vice chairman.

19 July. K. Hafner, "Vinologous and ethinylogous acid amides in organic synthesis"; A. B. Booth, "1-Menthol from *d*-3-carene"; G. Stork, "New cyclization reactions."

20 July. B. M. Trost, "Sulfur as a key element in reactions"; W. A. Waters, "Some mechanistic aspects of the free radical chemistry of organic nitrogen compounds"; A. Ledwith, "Cation radical intermediates in chemical and photochemical reactions."

21 July. J. I. G. Cadogan, "Mechanisms and synthesis in the chemistry of some reactive intermediates"; H. D. Hartzler, "Nucleophilic carbenes"; R. A. Abramovitch, "Electron-deficient nitrogen and related species."

22 July. E. C. Taylor, "Thallium in organic synthesis"; N. Calderon, "Mechanistic aspects and applications of the olefin metathesis reaction"; G. Wilke, "Catalytic reactions with zirconium, cobalt and nickel complexes."

23 July. Short papers by conference members.

Paper, Chemistry and Physics of

Harry L. Spiegelberg, chairman; Derek H. Page, vice chairman.

26 July. (Peter Benzing, discussion leader): Norman Gaylord, "Cellulose as a polymerization matrix"; Sverker Martin-Löf, "The mechanism of adsorption of polyelectrolytes on pulp surfaces"; B. Alince and A. A. Robertson, "Polymer sorption and cellulose porosity."

27 July. (John A. Ciriacks, discussion leader): Hans Giertz, "Water-cellulose relationships in bonding"; Daniel Caulfield and Richard Weatherwax, "Surfaces of water swollen cellulose"; Walter Drost-Hansen, "The nature of water-cellulose interactions."

28 July. (John Waterhouse, discussion leader): John Swanson, "Energy distribution during straining of paper"; Jerry Brezinski, "The relationship between fiber properties and the fracture energy of paper"; Millard Johnson, "Analysis of large deformations of fiber assemblies"; Alf de Ruvo, "The significance of hydrogen bonding for the mechanical properties of the wood-based polymers."

29 July. (Alan Proctor, discussion leader): Per Ahlgren, "Physicochemical aspects of chlorite delignification"; William E. Razzell, "Consequence of enzyme attack on pulp fibers"; Norman S. Thompson, "Oxidation of hemicelluloses."

30 July. (Derek H. Page, discussion leader): Graham Allen, "Hydrogen, ionic, and covalent bonding of paper"; Donald Winters, "Electrokinetic effects in forming mats of asbestos and cellulose fibers."

Photonuclear Reactions

W. Turchinetz, chairman; R. L. Bramblett, vice chairman.

16 August. (Chairman to be announced): C. Shakin, "A theory of the intermediate structure of the O^{16} giant resonance"; J. Baglin, "Modes of decay of the giant resonance of N^{14}." (Chairman to be announced): T. W. Donnelly, "One particle—one hole excitations by electron scattering"; K. M. Crowe, "Pion capture gamma rays and giant resonance analogues."

17 August. (Chairman to be announced): J. W. Lightbody, "High resolution electron scattering at moderate momentum transfers"; S. Fallieros, "Sum rules in electron scattering and photonuclear processes." (Chairman to be announced): (J. M. Eisenberg, "Short range correlations"; E. J. Moniz, "Investigation of nuclear structure with high energy probes."

18 August. (Chairman to be announced): J. Heisenberg, "Shapes of nuclear static and transition charge densities"; G. Backenstoss, "Hadronic and mesic atoms." (Chairman to be announced): B. Berman, "Threshold photoneutron experiments"; (speaker to be announced), "Recent results in nuclear fission."

19 August. (Chairman to be announced): J. O'Connell, "Electromagnetic aspects of the nuclear three and four body problems"; (speaker to be announced), "Alpha particle and cluster models of nuclear states." (Chairman to be announced): I. Halpern, "The mechanism of fast nucleon capture"; P. Paul, "Evidence for isospin splitting of the giant dipole resonance from radiative proton capture."

20 August. (D. Zaffarano, session chairman): C. Tzara, "New experimental results from Saclay"; W. Bertozzi, G. E. Brown, B. M. Spicer, and J. D. Walecka. Round table on present status and future prospects of photonuclear physics.

Physical Metallurgy

James C. Li, co-chairman; Michael F. Ashby, co-chairman; K. Aust, vice chairman.

The Fundamentals of Strengthening by a Dispersion of a Second Phase

28 June–2 July. Low-temperature yield stress: L. M. Brown; U. F. Kocks and D. Bacon. Work hardening: P. B. Hirsch; T. Mori; E. Hart. Creep: W. Nix and C. Barrett; R. Raj; G. Greenwood. Fatigue: G. Luetjering. Fracture: A. Argon. Effect of a dispersion on recrystallization: E. Hornbogen. (Subject to be announced): F. R. N. Nabarro.

Plasma Chemistry

John R. Hollahan, chairman; Gerald Smolinsky, vice chairman.

2 August. "General overview of current problems in plasma chemistry"; "Low temperature plasma diagnostics"; "High temperature plasma diagnostics."

3 August. "Engineering plasmas"; "Induction plasmas in chemical synthesis"; "The fusion torch plasma."

4 August. "Organic reactions in a discharge plasma"; "Organic polymers formed in a glow discharge"; "Metal oxide films formed by a glow discharge."

5 August. "Surface modification by a plasma discharge"; "Surface crosslinking of polymers in a plasma discharge"; "Modification of surfaces by a plasma discharge."

6 August. "Plasma devices used to recover substances from metallurgical gases"; "Reactions of active nitrogen with organic substances." Speakers: F. Kaufman, A. V. Phelps, J. H. Mullen, A. T. Bell, V. Krukonis, B. J. East-

lund, H. Suhr, A. M. Mearns, J. C. Mackenzie, R. J. Sunderland, M. Hudis, J. E. Flinn, S. E. Khalafalla, and N. N. Lichten.

Plasma Physics

Harry Dreicer, chairman; C. B. Wharton, vice chairman.

Basic Plasma Effects: Their Theory and Application to Plasma Diagnostic Problems

28 June. Electron and ion waves: "Their fundamental properties under experimentally realizable conditions (including effect of plasma gradients, collisions, non-Maxwellian distributions, magnetic field, boundaries, non-linear behavior, stability conditions)"; "Observational evidence for electron and ion waves (Do we understand how to launch, detect, and discriminate among various waves and pseudowaves? How to distinguish experimentally among free streaming, Landau damping, collisional damping, and mode coupling.)" Plasma echoes: how they are generated and explained: "Echo observations on laboratory plasmas: can this technique be extended to plasma diagnostic problems on fusion plasma confinement systems?"

29 June. Density fluctuations: radiation emitted and scattered by plasmas: "Conversion of plasma oscillations to transverse electromagnetic waves (what is the intensity and spectral distribution of such emission radiation?)"; "Optical satellite signals induced by collective effects (can this effect be used to study hot plasmas with the help of tracer gases?)"; "The scattering of microwave radiation by unstable and turbulent plasma density fluctuations (what are the experimental limitations of this technique when applied to hot plasmas?)"; "Laser scattering observations on high and low β plasmas (including the measurement of magnetic fields by this technique, and an appraisal of the latest detector developments in the far infrared)."

30 June. DC plasma resistivity: anomalous and otherwise: "Does a fundamental transport coefficient exist for the DC plasma resistivity? A reply from a computer simulationist; a reply from a kinetic theorist; a reply from an experimentalist." AC plasma resistivity: "Theory of anomalous AC resistivity": Kinetic theory; particle simulation. "Measurement of plasma resistivity near the electron plasma frequency (with emphasis on finite plasma effects and effects of density fluctuations)."

1 July. Basic effects in fusion experiments: "Does a valid collisionless plasma shock theory exist?": Kinetic theory results; plasma simulation results. "High β shock heating experiments (are the shocks collisionless? If so has the dissipative mechanism been identified?)"; "Interpretation of transport observations made on Tokamak plasma systems (what are the main diagnostic problems faced by the Tokamak research groups?)"; "The use of synchrotron radiation as a diagnostic tool (what technical developments are required to utilize the synchrotron radiation from fusion plasma devices as a diagnostic tool?)."

2 July. Organization of the 1972 Gordon Conference. Presentation of any new ideas generated by the conference.

Polymers

Vivian Stannett, chairman; Irving Skeist, vice chairman.

2 August. (H. N. Friedlander, discussion leader): Edward A. Standage, "Thermal oxidation and pyrolysis of polyacrylonitrile fiber"; H. N. Friedlander, "Chemical reactions on polymeric fiber surfaces." (Otto Vogl, discussion leader): C. G. Overberger, "Apolar bonding as a major factor in the reaction of polyvinyl imidazoles with esters."

3 August. (J. L. Gardon, discussion leader): E. P. Stahel, "Emulsion polymerization of styrene in flow systems"; M. Litt, "Emulsion polymerization of vinyl acetate." (J. Silverman and S. Russo, discussion leaders): A. Chapiro, "New work in radiation polymerization."

4 August. (R. P. Kambour, discussion leader): H. B. Hopfenberg, "Diffusion of solvents in glassy polymers"; R. D. Andrews, "Solvent treatments and morphological changes in semi-crystalline polymers." (Walter H. Stockmayer, discussion leader): H. Morawetz, "Chemical reaction rates reflecting the physical properties of polymer solutions."

5 August. (G. B. Butler, discussion leader): Frank Millich, "Polyisonitriles." (W. W. Graessley, discussion leader): G. E. Hulse, "Polyolefin crosslinking chemistry." (F. E. Karasz, discussion leader): A. Ziabicki, "The glassy state."

6 August. (R. W. Lenz, discussion leader): T. L. Patton, "A high temperature arylene parabanic acid polymer from aromatic diisocyanates"; James Economy, "A high temperature *p*-hydroxy-benzoic acid polymer."

Proteins

Gerald D. Fasman, co-chairman; Karl A. Piez, co-chairman; G. Guidotti, co-vice chairman; G. Edelman, co-vice chairman.

Structure and Function of Proteins

19 July. Muscle (H. Huxley, session chairman): H. Huxley, "Myofibril organization"; S. Lowey, "Myosin structure and chemistry"; A. Weber, "Myosin ATPase activity." Blood clotting (E. Davie, session chairman): E. Davie, "Factors VIII, IX, X"; R. Doolittle, "Fibrinogen and fibrin"; K. Robbins, "Plasminogen and plasmin."

20 July. Protein folding (C. Anfinsen, session chairman): C. Anfinsen, "Chemistry"; A. Schechter, "Kinetics"; H. Scheraga, "Thermodynamics." Discussants: H. Taniuchi, O. Jardetzky, and C. Levinthal. Polypeptide hormones (J. Pierce, session chairman): J. Pierce, "Thyroid stimulating hormone"; O. Bahl, "Human chorionic gonadotropin"; D. N. Ward, "Luteinizing hormone"; H. Niall, "Parathyroid hormone, lactogenic and growth hormone."

21 July. Physical chemical probes of macromolecular structure: (S. Timasheff, session chairman): G. Acker, "Molecular sieve chromatography"; R. Lord, "Laser-raman"; W. Phillips, "NMR"; J. Yguerabide, "Fluorescence." Nucleoproteins (E. M. Bradbury, session chairman): E. M. Bradbury, "Physical studies"; J. Bonner, "Biological aspects"; G. Felsenfeld, "Chromatin structure"; G. Fasman, "ORD and CD studies."

22 July. Protein function and structure: X-ray studies (F. Richards, session chairman): F. Richards, "Active sites and enzyme function"; A. D. McLachlan, "Haemoglobin"; C. Branden, "Dehydrogenases."

23 July. Subunit interactions (I. Klotz, session chairman): I. Klotz, "Physical-chemical studies"; L. Reed, "Biological control mechanisms"; A. Klug, "Virus assembly."

Quantum Solids and Fluids, Dynamics of

W. Cochran, co-chairman; Gen. Shirane, co-chairman.

Lattice Dynamics and Phase Transitions

9–13 August. "Modes in magnetic and structural transitions"; "Neutron scattering studies of structural phase transitions"; "A review of 110°K phase transition in $SrTiO_3$"; "Anharmonicity in crystals with particular reference to ferroelectrics"; "The Raman-Brillouin spectroscopy of soft modes and their interactions"; "Ultrasonic investigation of phase transitions"; "Critical dynamics of KH_2PO_4"; "Phase transitions in HCl and related crystals"; "Phonon propagation studies in solids"; "Modes and critical fluctuations at phase transitions and at current instabilities"; "Neutron scattering by liquid helium"; "Neutron scattering by crystalline He and Ne." Discussion leaders will include: A. S. Barker, B. N. Brockhouse, H. Z. Cummins, R. J. Elliott, B. D. Silverman, N. R. Werthamer, and J. M. Worlock. Speakers will include: J. D. Axe, R. Blinc, M. Blume, R. A. Cowley, P. A. Fleury, C. W. Garland, S. Hoshino, V. Narayanamurti, E. Pytte, S. K. Sinha, J. S. Slonczewski, and A. D. B. Woods.

Radiation Chemistry

Francon Williams, chairman; J. K. Thomas, vice chairman.

12 July. R. L. Platzman, discussion leader): William A. Chupka, "Photoionization of molecules." (Edwin J. Hart, discussion leader): F. S. Dainton, "Recent developments in the chemistry of the electron."

13 July. (G. Wilse Robinson, discussion leader): R. Stephen Berry, "Radiationless transitions"; M. A. El-Sayed, "Nonradiative processes involving the triplet state." (Leon M. Dorfman, discussion leader): Peter M. Rentzepis, "Laser studies in the picosecond region"; K. B. Eisenthal, "Studies of ultrafast molecular processes using picosecond laser pulses."

14 July. (W. H. Hamill, discussion leader): Bruce H. Mahan, "Ion recombination in gases"; Peter Ausloos, "Ion-molecule reactions." (G. R. Freeman, discussion leader): Werner F. Schmidt, "Radiation-induced ionization of liquids studied by electrical conductivity methods."

15 July. (Richard E. Merrifield, discussion leader): Martin Pope, "Exciton-charge carrier interaction in organic solids"; Mendel D. Cohen, "Chemical consequences of excitation migration in organic solids." (J. K. Thomas, discussion leader): Contributed papers.

16 July. (H. A. Schwarz, discussion leader): Harold C. Box, "ESR and ENDOR studies of radiation damage in single crystals at low temperature"; Gidon Czapski, "Redox reactions of hydrogen peroxide with metal ions studied by ESR in a flow system."

Semiconductors, Chemistry and Metallurgy of

Jules J. Duga, chairman; Morton E. Jones, vice chairman.

12–16 July. M. Aven, "III-V and II-VI light emitting materials"; R. A. Burmeister, "Liquid epitaxy"; G. A. Cullen, "Heteroepitaxy"; G. E. Peterson, "Magnetic resonance as a probe for stoichiometry in various inorganic materials"; B. L. Crowder, "Ion implantation in semiconductors"; E. C. Lightowlers, "Charged particle activation analysis of impurities in semiconductors"; R. A. Logan, "Defect equilibria in gas"; T. B. Reed, "Deviations from stoichiometry in oxides"; B. Schwartz, "Surface chemistry of compound semiconductors"; L. M. Foster, "Thermodynamics and phase diagrams of ternary alloys"; J. Wernick, "Preparation and properties of II-IV-V compounds"; F. Holtzberg, "Magnetic semiconductors"; J. Mee, "Preparation of magnetic bubble memories"; K. Weiser, "Amorphous semiconductors"; H. C. Casey, "Impurity incorporation in III-V compounds"; F. Smith, "Deviations from stoichiometry in II-VI compounds"; M. R. Lorenz, "Ternary alloys—materials engineering"; Harry Sello, "Chemistry and metallurgy of metal/semiconductor junctions"; Richard M. Brown, "YAG mixed crystals."

14 July. Recent developments in the chemistry and metallurgy of semiconducting materials. Speakers wishing to submit short papers should be prepared accordingly.

15 July. Erwin Benkoe, "The science and engineering of toys."

Separation and Purification

Earle C. Makin, Jr., chairman; James Cochran, vice chairman.

16–20 August. John Berg, "Liquid interfacial phenomena"; G. D. Davis, "Hydrocarbon separation using ligand exchange reaction"; Norman Skelly and Rudolph H. Stehl, "Industrial applications of rapid ion exchange separations"; Thomas Orofino and R. McKinney, "Hollow fiber reverse osmosis purification of water"; John R. Anderson, "Modern methods of water pollution abatement"; Everett J. Fuller, "Separations by slurry extractions"; Norman N. Li, "Liquid membrane separations"; Richard G. Atwood, "Separation studies in melt crystallization"; Carl A. Brunner, "Demineralization of municipal wastes"; M. Van Winkle, "Design and operational variables in distillation separations."

Solids, Chemistry and Physics of

Alan G. Chynoweth, co-chairman; Volker Heine, co-chairman.

Bonding and the Structures of Solids

26 July. "Crystal structure and phase stability"; "Pseudopotential theory of s-p bonded metals"; "Theory of s-p bonded semiconductors and their phase diagrams."

27 July. "Chemical bonds in molecules"; "Accurate molecular orbital calculations." "Crystal geometries"; "Structures of alloys"; "High pressure phases."

28 July. "Physical methods of investigating electronic structure including NMR, Mössbauer and soft x-ray techniques." "Electron density mapping by x-ray techniques." "Transition metals and their alloys"; "Phase diagrams, crystal structures and cohesive energies."

29 July. "Theoretical methods for determining electronic structure focussing on the local atomic environment"; "Transition metals and alloys." "Bonding of atoms at surfaces as revealed by LEED"; Chemisorption, adhesion and migration on surfaces, theory and experiment."

30 July. "Theoretical chemistry of superconductors." "The relation between fundamental studies of bonding and the useful properties of materials." (Partial list of speakers: P. W. Anderson, A. J. Bennett, R. A. Deegan, H. D. Hagstrum, V. Heine, L. Kaufman, L. F. Mattheiss, W. B. Pearson, J. C. Phillips, J. C. Tracy, J.A. Van Vechten, and D. Weire.)

Space, Physics and Chemistry of

George W. Wetherill, chairman; Peter M. Millman, vice chairman.

5 July. P. Van de Kamp, "Planets of other stars"; (speaker to be announced), "Formation of stars and planetary systems"; J. Dohnanyi, "Observational and theoretical data on size distribution of asteroids and smaller bodies"; T. B.

McCord, "New photometric data on asteroids."

6 July. N. Toksöz, "Lunar impacts—seismic data and cratering"; (speaker to be announced), "Terrestrial impacts—fireballs, meteorites, and craters"; W. C. Meecham, "Airwaves"; T. Owen, "Physical properties of comets"; E. Everhart, "Dynamical history of comets."

7 July. (Speakers to be announced), "Recent lunar discoveries"; (speakers to be announced), "New developments in meteorite studies."

8 July. (Speakers to be announced), short contributions; W. B. Hubbard, "Interiors of major planets"; (speaker to be announced), "Present state of cosmology."

9 July. P. J. Gierasch, "Dynamics of lower atmospheres of Mars and Venus"; M. McElroy, "Upper atmosphere and atmospheric composition of Mars and Venus."

Statistics in Chemistry and Chemical Engineering

Alonzo Church, chairman; Fred C. Leone, vice chairman.

28 June–2 July. Morris Kaplan, "Statistics and consumer product evaluation"; Henry Scheffé, "Calibration"; Barry Margolin, "Analysis of categorical data"; Charles Bell, "Nonparametric methods"; J. S. Hunter and J. Kelly Lee, "Time series—applications"; Otto Dykstra, "Augmentation of experimental designs"; Charles Hendrix, "Empirical optimization"; Jacobo Sredni, "Testing adequacy of models."

Structural Macromolecules: Mucopolysaccharides

Albert Dorfman, chairman; Karl Meyer, vice chairman.

21 June. Structure of mucopolysaccharides and their protein complexes (Karl Meyer, discussion leader). Physiology and organization of connective tissue matrix (Martin B. Mathews, discussion leader).

22 June. Biosynthesis of acid mucopolysaccharides (Lennart Rodén, discussion leader). Degradation of acid mucopolysaccharides (Oscar Touster, discussion leader).

23 June. Differentiation of connective tissues (Jerome Gross, discussion leader). Cell interactions I (Aron A. Moscona, discussion leader).

24 June. Cell interactions II (Max Burger, discussion leader). Biological effects of mucopolysaccharides (Helen Muir, discussion leader).

25 June. Mucopolysaccharidoses (Albert Dorfman, discussion leader).

Textiles

Richard H. Braunlich, chairman; Arnold M. Sookne, vice chairman.

5 July. Polymer science as related to fiber properties (Arthur V. Tobolsky, discussion leader): Anton Peterlin, "Morphology and properties of oriented crystalline polymers"; Jack L. Koenig, "Laser Raman spectroscopy of polymers"; John O. Warwicker, "The structural causes of dye variations in polyamide and polyester fibers."

6 July. New fibers and fiber variants needed for future textile markets: Howard F. Elsom; Wilhelm Albrecht; Arnold M. Sookne. (Earl Peters, discussion leader.)

7 July. Fiber and fabric flammability (Richard E. Seaman, discussion leader): Joseph E. Clark, "Apparel and home furnishing fires—the government viewpoint"; Cameron A. Baker, "Flameproofing fabrics for consumer uses—the producer and retailer viewpoint"; Irving N. Einhorn, "Routes to achieve fiber and fabric flame retardancy."

8 July. Peter H. Britton and Arthur H. Drelich, "The discontinuous bonding of nonwoven fabrics"; Fred H. Steiger, "The adsorption of liquids by compressed fiber systems": A. Charles Tanquary, "Nylon 4—fact, fiction and the future."

9 July. John Peter Knudson, "Spunbonded web mechanics: some effects of interactions between filament properties, bond characteristics and filament distribution on fabric performance and end-use potential"; John Skelton, "The recovery of textile materials from imposed deformation"; Harry R. Billica, "Understanding fabric appearance factors."

Thin Films

R. B. Marcus, chairman; John B. Hudson, vice chairman.

Epitaxy

9 August. (D. Dove, discussion leader): D. W. Pashley, "The historical background to current problems in epitaxy"; J. H. van der Merwe, "Structural influences of the interaction across expitaxial bicrystal interfaces." (M.

Stowell, discussion leader): E. Bauer, "A critical look at the theory of epitaxy."

10 August. (J. Hudson, discussion leader): N. Cabrera, "Atomic collisions on surfaces"; J. Arthur, "The interaction of molecular beams with solid surfaces." (T. Hutchinson, discussion leader): H. Bonzel and N. A. Gjostein, "Diffusion on clean surfaces and the influence of adsorbed layers."

11 August. (E. Bauer, discussion leader): H. Sato, "Morphology of nuclei and epitaxial behavior on vapor deposition"; H. Poppa, "On the feasibility of reliable epitaxial nucleation measurements by *in situ* electron microscopy." (W. Jesser, discussion leader): J. W. Matthews, "Defects in thin epitaxial films."

12 August. (K. Lawless, discussion leader): P. Palmberg, "Application of LEED and auger spectroscopy to studies of epitaxial thin film growth"; W. R. Graham, "Studies of epitaxy by field ion microscopy." (H. Poppa, discussion leader): M. Stowell, "Small particle effects in thin film growth."

13 August. (R. B. Marcus, discussion leader): K. L. Chopra, "Critical survey of methods for growing epitaxial films"; B. Joyce, "The nucleation of epitaxial silicon films."

Toxicology and Safety Evaluations

Edward D. Palmes, chairman; Leon Goldberg, vice chairman.

2 August. Toxins of biological origin in food (Richard Henderson, discussion leader): John C. Ayres, "Microbial and algal"; Gerald N. Wogan, "Fungal." (Leo Friedman, discussion leader): Staffan Skerfving, "Toxicology of mercury in fish."

3 August. Adverse effects of physical environmental factors (Gordon J. Stopps, discussion leader): Frank Ellis, "High ambient temperatures"; Frederick Urbach, "Ultraviolet light." (Robert A. Scala, discussion leader): Carrol Weil, "Inter-laboratory reproducibility of certain toxicological experiments."

4 August. Codex alimentarius (Bernard L. Oser, discussion leader): Herbert Blumenthal, "Food additives"; John P. Frawley, "Pesticides." (Frank Blood, discussion leader): Virgil H. Freed, "Toxicological implications of pesticide distribution in the environment."

5 August. (David W. Fassett, discussion leader): Sidney Laskin, "Experimental lung cancer by inhalation of

environmental agents"; David L. Coffin, "Interaction of biological and chemical agents on the lung." (Edward D. Palmes, discussion leader): Horace W. Gerarde, "A minimal aural dose (MAD) of etymology."

6 August. (Leon Goldberg, discussion leader): Emil M. Mrak, "Implications for national policy of safety assessment of chemicals."

Forthcoming Events

April

6–8. Methods in **Air Pollution and Industrial Hygiene** Studies, 12th annual, Los Angeles, Calif. (E. Jeung, Air and Industrial Hygiene Lab., California State Dept. of Public Health, 2151 Berkeley Way, Berkeley 94704)

7–9. **Psychometric** Soc., St. Louis, Mo. (W. B. Schrader, Educational Testing Service, Princeton, N.J. 08540)

10. **Paleontological Research** Institution, Ithaca, N.Y. (K. V. W. Palmer, PRI, 1259 Trumansburg Rd. Ithaca 14850)

12–15. **Air and Stream Improvement**, 6th annual conf., Quebec City, P.Q., Canada, (D. H. Paterson, Canadian Pulp and Paper Assoc., 2300 Sun Life Bldg., Montreal, 110, P.Q., Canada)

12–15. National **Telemetering** Conf. and Exposition, 21st annual, Washington, D.C. (H.B. Riblet, Johns Hopkins Univ., Applied Physics Lab., 8621 Georgia Ave., Silver Spring, Md. 20910)

12–16. Federation of the American Societies for **Experimental Biology**, Chicago, Ill. (J. F. A. McManus, 9650 Rockville Pike, Bethesda, Md. 20014)

12–16. American **Geophysical** Union, 52nd annual, Washington, D.C. (G. D. Mead, Lab. for Space Physics, NASA Goddard Space Flight Center, Greenbelt, Md. 20771)

12–16. American Assoc. of **Immunologists**, Chicago, Ill. (H. Metzger, AAI, 9650 Rockville Pike, Bethesda, Md. 20014)

12–17. American Soc. for **Experimental Pathology**, Chicago, Ill. (R. E. Kuntti, ASEP, 9650 Rockville Pike, Bethesda, Md. 20014)

12–17. American Inst. of **Nutrition**, Chicago, Ill. (J. Waddell, AIN, 9650 Rockville Pike, Bethesda, Md. 20014)

12–17. American Soc. for **Pharmacology and Experimental Therapeutics**, Chicago, Ill. (E. B. Cook, ASPET, 9650 Rockville Pike, Bethesda, Md. 20014)

12–17. American **Physiological** Soc., Chicago, Ill. (R. G. Daggs, APS, 9650 Rockville Pike, Bethesda, Md. 20014)

13–15. **Frontiers in Education**, Atlanta, Ga. (B. J. Dasher, College of Engineering Georgia Inst. of Technology, Atlanta 30332)

13–15. National Conf. and Exposition in **Medicine**, Boston, Mass, (D. Christiansen, Electronics in Medicine P-30, 330 W. 42 St., New York 10036)

13–15. **Microwave Research** Inst., 21st