

Meetings

Program of the Gordon Research Conferences

The Gordon Research Conferences for 1959 will be held from 15 June to 4 September at Colby Junior College, New London, N.H.; New Hampton School, New Hampton, N.H.; and Kimball Union Academy, Meriden, N.H.

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 lectures and discussion groups. Sufficient time is available to stimulate informal discussions 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 co-operative efforts between different 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 subjects under discussion. The primary purpose of the program is not to review the known fields of chemistry and physics but 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 making progress.

In order to protect individual rights and to promote discussion, it is an established requirement of each conference that no part of the 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 conferences 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. *All applications must be submitted on the standard application form, which may be obtained by writing to 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.

The director will submit the names of those requesting authorization to attend to the Conference Committee for each conference. This committee will review the names and select the members in an effort to distribute the attendance as widely as possible among the various institutions and laboratories represented. A registration card will be mailed as soon as possible to those selected. Advance registration by mail for each conference is required, and registration is completed on receipt of the card and a deposit of \$15. (Checks are to be made payable to the Gordon Research Conferences.) The deposit of \$15 will be credited against the fixed fee for the conference if the individual attends the conference for which he has applied. A registration card not accompanied by the \$15 deposit will not be accepted.

The Board of Trustees of the conferences has established a fixed fee of \$100 for attendance 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. This fixed fee will be charged regardless of the time a conferee attends the conference—that is, for periods of from 1 to 4½ days. It is divided as follows: registration fee, \$40 (\$15 for administration and \$25 for the special fund); room and meals, \$60 (including gratuities) for 5 days. An additional charge of \$1 per night per person will be made for a room with private bath or for a single room, of which there are only a limited number avail-

able. These rooms will be assigned in the order that applications are received.

Members attending a conference 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 of mutual interest. It is to the advantage of all participants to attend a conference for the entire week. If special circumstances warrant living elsewhere, a registration fee of \$50 is charged.

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

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 (the amount allotted for the special fund) in the fixed fee. Application for this special fee (\$75) must be made when the registration card is returned to the director.

Accommodations are available for a limited number of women to attend each conference, and also for wives who wish to accompany their husbands. 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. Children under 12 years of age cannot be accommodated. Dogs and other animals will not be permitted in the dormitories.

Special fund. A special fund is provided for by the Board of Trustees from the registration fee and is made available to the chairman of each conference for the purpose of assisting scientists who could not otherwise attend or participate because of financial limitations. This fund is provided with the object of increasing the participation of research workers. Its use is not limited to scientists who have been invited by the chairman to attend a conference in order to present a paper. The money is to be used as an assistance fund only and may be used to contribute toward traveling expenses or subsistence expenses at the conference, or both. Total travel and subsistence expenses will not usually be provided.

Cancellations. The cancellation of an approved application for attendance at a conference will cause forfeiture of the \$15 deposit.

Attendance. Requests for attendance at the conferences, or for additional information, should be addressed to W. George Parks, Director, Department of Chemistry, University of Rhode Island, Kingston, R.I. From 15 June to 4 September 1959 mail should be addressed to Colby Junior College, New London, N.H.

Colby Junior College

Separation and Purification

Edmond S. Perry, *chairman*

John E. Powers, *vice chairman*

15 June. John R. Bowman, "Separation of a continuum of components"; Lockhart B. Rogers, "Analytical separations and the Tower of Babel"; Maurice L. Huggins, "Separations in polymer systems."

16 June. Carl H. Deal, "Activity coefficients from gas chromatography measurements"; Julian F. Johnson, "Applications of novel gas chromatographic methods"; Harold H. Strain, "Electrochromatography—new modifications and applications."

17 June. Harry P. Gregor, "Membrane separation and purification processes"; Gerold Schwarzenbach, "Specific behavior of metals in complex formation."

18 June. William G. Pfann, "Recent developments in zone refining"; Kenneth B. McAfee, "Atomic interactions in barrier separations"; Paul G. LeFevre, "Permeation through animal cell membranes."

19 June. Luther E. Preuss, "Vacuum distillation and the radioactive tracer technique"; Theodore J. Williams, "Instrumentation and automatic control of the distillation process."

Petroleum

George H. Denison, *chairman*

Cheves Walling, *vice chairman*

22 June. J. R. Thomas, "Sonic degradation of high polymers in solution"; G. S. Hammond, "Some chemistry of oil-soluble chelates."

23 June. J. H. Schulman, "Influence of selective adsorption of amphipathic molecules on the bulk properties of solids"; Turner Alfrey, "Visco-elastic properties of polymer solutions."

24 June. M. Carmack, "Chemistry of 1,2,5-thiadiazole and related compounds"; F. M. Fowkes, "Polymeric detergents in oil."

25 June. S. A. Troelstra, "Stability of lyophobic colloids in hydrocarbons"; J. H. Schulman, "Static and dynamic control of contact angle."

26 June. H. H. Horowitz, "Bearing performance and elastic properties of polymer-thickened lubricating oil."

Catalysis

R. P. Eischens, *chairman*

Herman Pines, *vice chairman*

29 June. R. L. Burwell, Jr., "Reactions of hydrocarbons with hydrogen and deuterium on chromium oxide catalysts"; A. C. Zettlemoyer, "Acid sites."

30 June. R. J. Kokes and P. H. Emmett, "The structure of Raney nickel catalysts and their activity for ethylene hydrogenation"; P. W. Selwood, "Magnetization and chemisorption."

Qualified scientists are invited to submit applications for attendance at the Gordon Research Conferences. Application blanks may be obtained by returning the coupon that appears on page 654 to Dr. W. George Parks, Department of Chemistry, University of Rhode Island, Kingston, R.I.

1 July. P. H. Emmett, "Recent tracer studies on the mechanism of the Fischer-Tropsch synthesis"; D. S. Breslow, "Polymerization of ethylene with homogeneous catalysts."

2 July. G. L. Young, "Chemisorption studies from fuel cell potentials"; A. N. Webb, "Oxygen adsorption on supported platinum"; J. R. Tomlinson and D. E. O'Reilly, "Magnetic and optical studies of transition metal oxide catalysts."

3 July. R. H. Lindquist, "The nature of chromia-alumina catalysts."

Polymers

F. R. Eirich, *chairman*

E. M. Fettes, *vice chairman*

6 July. *New polymers*: H. F. Mark, "New developments in the field of high polymers"; L. W. Butz, A. M. Lovelace, J. C. Montermoso, "Research into extreme-performance polymers"; P. Goodman, "Pyroceram"; F. P. Caserio, "Linear phosphinoborane polymers"; W. F. Busse and W. C. Fernelius, *discussion leaders*.

7 July. *Free radicals*: C. Walling, "Recent developments in free-radical chemistry"; A. D. Jenkins, "Patterns of free-radical reactivity"; L. A. Errede, "Solution polymerization of *p*-xylene"; M. Szwarc and W. E. Cass, *discussion leaders*.

8 July. *Ionic polymerization*: A. V. Topchiev, "Stereospecific polymerization of α -olefins"; A. Nasini, "Polymers from diazoalkanes: mechanisms and stereospecificity"; C. E. H. Bawn, "Polymerization of diazo compounds with boron catalysts"; D. L. Glusker, "Mechanism of the anionic polymerization of methyl methacrylate"; D. Pepper and C. G. Overberger, *discussion leaders*.

9 July. *Solid state*: H. A. Stuart, "The para crystalline structure of high polymers"; J. D. Hoffman, "Dielectric absorption in semicrystalline polymers"; F. Price, "The nature of the spherulites in polyethylene"; J. J. Hermans and J. H. Gibbs, *discussion leaders*.

10 July. *Structure and behavior*: E. F. Gurnee, "Optical studies of amorphous polymers"; H. W. McCormick, "The effect of molecular weight distribution

on the mechanical properties of polystyrene"; T. Smith, "The ultimate properties of amorphous polymers"; A. Bueche, *discussion leader*.

Textiles

Leonard Smith, *chairman*

Fred Fortess, *vice chairman*

13 July. Harold P. Lundgren, "New findings in wool structure, stability, and modification"; Sheldon Sprague, "The relationship of polymer constitution and fiber fine structure to fiber physical properties."

14 July. V. W. Tripp and Fred Perskerson, "Phenomena associated with cross-linking of cotton cellulose"; Richard Steele and John L. Gardon, "Chemical control of crease recovery and washwear effects in cellulose fibers."

15 July. E. L. Wittbecker, "Interfacial polycondensation"; E. E. Magat, "Interfacial spinning"; E. V. Martin, "Kodel polyester fibers."

16 July. Joel Lindberg, "The measurement of mechanical properties and prediction of fabric performance"; DeWitt R. Petterson and Stanley Backer, "On the mechanics of nonwovens."

17 July. Jack C. Smith, "Stress-strain relations in yarns subjected to high-speed impact."

Corrosion

Philip M. Aziz, *chairman*

Milton Stern, *vice chairman*

20 July. *The nature of metal surfaces as revealed by friction and wear measurements* (H. A. Liebhafsky, *moderator*): E. H. Freitag, "Modern methods of studying the structure of solid surfaces"; A. J. Haltner, "Solid lubricants"; L. E. St. Pierre, "Reactions at metal surfaces"; E. H. Freitag, "The friction and deformation of metallic surfaces."

21 July. *Kinetics of oxidation processes* (J. E. Draley, *moderator*): F. W. Young, "Oxide nuclei and dislocations"; M. Cohen, "The oxidation of iron at low temperatures"; A. J. Rosenberg, "Oxidation of intermetallic compounds"; R. K. Hart, "Investigation of metals in aqueous environments with particular reference to aluminum."

22 July. *Kinetics of electrode processes* (M. Stern, *moderator*): B. E. Conway, "Corrosion of the nickel-nickel oxide electrode; kinetics and mechanism of self-discharge and oxygen evolution"; J. O'M. Bockris, "The mechanism of the dissolution of metals"; D. A. Vermilyea, "The role of crystal defects in corrosion processes."

23 July. *Inhibition of corrosion reactions* (N. Hackerman, *moderator*): A. C. Makrides, "The inhibition of metal dissolution"; M. Stern, "The effect of metal alloying on inhibition processes"; J. E. O. Mayne, "The inhibition of the corrosion of iron in neutral and alkaline solutions"; E. A. Blomgren, "The ad-

sorption of aromatic amines on metal surfaces."

24 July. *Inhibition of corrosion reactions* (continued): general discussion of current theories of inhibition.

Organic Coatings

Donald F. Koenecke, *chairman*
S. Gusman, *cochairman*

27 July. C. E. Anagnostopoulos, "A statistical-thermodynamic treatment of polyvinyl chloride plasticizer compatibility"; Valeria Artel, "Evaporation and diffusion characteristics of resin solvents."

28 July. J. E. O. Mayne, "The mechanism of the inhibition of the corrosion of iron particularly by paint"; J. P. Simko, "Studies on films under cathodic protection conditions."

29 July. B. D. Beitchman, "Studies of the mechanism of asphalt degradation during weathering"; M. E. Bailey, "Correlation of structure and coating properties of polyurethane copolymers."

30 July. J. F. Vitkuske, "Fundamental colloidal behavior of latexes"; M. C. Carpenter, "Practical application of latex fundamentals in the formulation and use of latex-based and other waterborne industrial paints."

31 July. H. Dannenberg, "Measurement of adhesion by a blister method."

Medicinal Chemistry

Alfred Burger, *chairman*
Irwin H. Slater, *vice chairman*

3 Aug. M. Nickerson, "Adrenergic mechanisms and hypertension"; R. P. Mull, "Chemistry of agents with protracted antihypertensive action which 'deform' the cardiovascular responsiveness to adrenergic and antiadrenergic substances"; R. A. Maxwell, "Pharmacology of compounds with central nervous and cardiovascular activity which 'deform' the cardiovascular responsiveness to adrenergic and antiadrenergic substances"; A. J. Plummer, "The hypotensive activity of various esters of methyl reserpate."

4 Aug. *Chemotherapy of schistosomiasis*: O. D. Standen, "Mode of action"; E. F. Elslager, "Structure activity"; H. Most, "Clinical status." *Thyroxin and its analogs*: R. I. Meltzer, "A survey of synthetic methods"; R. L. Kroc, "A survey of biological activities."

5 Aug. R. Boissonnas, "Preparation and testing of some new synthetic peptides"; C. H. Li, Eugen Schnabel, David Chung, "Synthetic peptides and their melanocyte-stimulating activities"; L. T. Skeggs, "Polypeptides of the renin-angiotensin system"; H. F. Hardman, "An analysis of the effect of pH and drug ionization on cardiac tissue."

6 Aug. M. Sidman, "Operant behavioral techniques"; P. B. Dews and W. Morse, "Schedule parameters as deter-

minants of drug effects"; T. Verhave, "Behavioral analysis of methamphetamine"; I. M. Weiner, "Mechanism of mercurial diuresis."

7 Aug. J. T. Litchfield, "Sequential analysis, screening, and serendipity"; C. J. Klett, "A clinical comparison of five phenothiazines—statistical treatment"; Samuel Irwin, "General philosophy and methodology of screening: a multidimensional approach."

On the evenings of 5 and 6 August only one paper is scheduled. Additional short presentations will be arranged at the time of the conference. Participants who wish to present 15- to 20-minute papers can plan to speak on these evenings.

Elastomers

Paul G. Carpenter, *chairman*
R. L. Zapp, *vice chairman*

10 Aug. J. P. Buckley and M. Berber, "A new technique for measuring volume swell and its application to elastomer studies"; A. R. Kemp, "Solubility and viscosity characteristics of elastomers"; R. Norman, "Frictional properties of flexible vinyl polymers."

11 Aug. A. M. Gessler, "The attrition of carbon black: surface chemistry and reinforcing effects"; E. M. Dannenburg, "Properties of attrited carbon black"; E. R. Bartholomew, "Elastomers for high-temperature services."

12 Aug. R. D. Stichler, "Observations on tire performance"; A. D. Dingle *et al.*, "Resilience and power loss of elastomers"; speaker and subject to be announced.

13 Aug. C. F. Fryling, "Colloidal properties of synthetic latices"; speaker and subject to be announced; speaker and subject to be announced.

14 Aug. Oliver Burke and Eldon Stahley, "Vinyl filler reinforcement of elastomers."

Food and Nutrition

L. J. Teply, *chairman*
D. B. Hand, *vice chairman*

17 Aug. C. A. Baumann, *chairman*: John Yudkin, "Some vitamin-carbohydrate interrelationships"; D. C. Herting, "Nutritional aspects of saturated fats." E. E. Howe, *chairman*: M. Behar, "Clinical and practical aspects of protein malnutrition."

18 Aug. H. P. Broquist, *chairman*: W. J. Darby, "Human requirements for some of the 'lesser' B-vitamins"; J. Matovinovic, "Metabolism of nucleic acids in normal and pathological thyroid." R. A. Harte, *chairman*: Panel: Grace A. Goldsmith, F. J. Stare, W. A. Krehl, J. M. Brozek, "What is a normal, acceptable, or desirable state of nutrition."

19 Aug. Hartley Howard, *chairman*: P. L. Day, "Food standards and the public welfare"; P. L. White, "Nutrition education and nutritional advertising."

R. H. Silber, *chairman*: R. E. Olson, "Metabolic functions of vitamin E and ubiquinone"; discussion: M. K. Horwitt.

20 Aug. A. E. Schaefer, *chairman*: H. Spector, "Relationship of food to radiation effects"; J. R. Couch, "Unidentified factors in chick nutrition." Z. I. Kertesz, *chairman*: A. G. van Veen, "Problems and possibilities in improving indigenous foods."

21 Aug. D. B. Hand, *chairman*: J. C. Bauernfeind, "Ascorbic acid in food technology"; F. W. Blodgett, "The future of pressurized food packages."

Instrumentation

Clifford E. Berry, *chairman*
Paul C. Hoell, *vice chairman*

24-28 Aug. *Invited papers*: J. Lloyd Bohn, "Instrumentation for use in satellite and rocket experiments"; Lawrence J. Fogel, "Linking man to high-speed machines"; David M. Gates, "High-altitude spectroscopy from balloons"; William Priestly, Jr., "Philosophy of design for an unattended computer-controlled process"; Paul E. Smith, Jr., "Instrumentation for industrial physiology"; Albert F. Welch, "Instrumentation in automotive research"; E. Hilburn, "Anamorphic motion picture display."

Contributed papers: J. H. Laub, "A study of externally pressurized gas bearings for instrumentation"; Sidney Lees, "New methods of measuring the wind"; R. H. Taplin, "Information extraction techniques for spectral analysis"; Ronald P. Schwenker, "Transistor demodulation at ultrasonic frequencies"; Raymond Jonnard, "A practical scheme for automatic clinical procedures"; E. Hilburn, "An N-dimensional cam"; Erik Blomgren, "New principles and devices for the study of electrochemical phenomena"; John J. Stansbrey, "New uses for microencapsulated materials"; W. Norris Tuttle, "New techniques for using semiconductor diodes in precision instruments"; C. S. Draper, "Dynamic support of instrument components by viscous fluids"; Phillip D. Schnelle, "Simplification of complex instrument functions"; Arthur E. MacNeill, "Therapeutic instrumentation for bedside use"; E. C. Lloyd, "A tilting air-lubricated piston gauge for pressures below 0.5" Hg."

Cancer

Frederik B. Bang, *chairman*
Philippe Shubik, *vice chairman*

31 Aug. *Epidemiology*: J. Clemmesen, "Epidemiology of lung and bladder cancer"; A. Lilienfeld, "Epidemiology of breast cancer." *Virus aspects* (Frederik B. Bang, *chairman*): M. A. Epstein, "Electron microscopy; purification of Rous virus"; W. Bernhard, "Electron microscopy of tumors"; R. F. Buffett and H. Levinthal, "A survey of the

leukemia and related tumor viruses in mice."

1 Sept. *Polyoma virus*: S. Stewart, "Studies on the antigenicity of SE polyoma virus and its relationship to other viruses"; B. Eddy, "Studies on the latency of SE polyoma virus"; W. Rowe, "Studies on polyoma virus." *Comparative oncology* (H. Schlumberger, chairman): Armin C. Braun, "A physiological basis for the autonomous growth of three non-self-limiting neoplastic diseases of plants"; H. Ratcliffe, "Comparative aspects of spontaneous tumors."

2 Sept. *Chemotherapy*. A. Goldin and J. Venditti, "Quantitative evaluation of drugs in mouse tumors"; J. Sholer and Leon Schmidt, "Quantitative evaluation of drugs in rat tumors"; W. Kessler and R. Jones, Jr., "Quantitative evaluation of drugs in rat leukemia"; G. Zubrod, E. K. Marshall, Jr., P. Waalkes, "Quantitative evaluation of drugs in man and correlation with animal data." *Biochemistry* (P. Shubik, chairman): E. Racker, "Carbohydrate metabolism in tumors"; H. Garland, "Radiotherapy."

3 Sept. *Deoxyribonucleic acid and tumors*: R. M. Herriott, "Biological properties of nucleic acids"; A. Fjelde and P. Sorkin, "Production of mouse tumors by nucleic acid extracts"; U. Heine, "RNA extracts of Rous tumors." *Tissue relationships* (P. Grant, chairman): A. A. Moscona, "Cellular interactions in experimental histogenesis"; B. G. Boving, "Invasion mechanisms in placentaion."

4 Sept. *Immunology test*: J. Makari, "Cancer detection by immunological methods," discussion led by A. Osler; K. Porter, "Electron microscopy of carcinogenesis."

New Hampton School

Chemistry and Physics of Liquids

B. H. Zimm, chairman

R. T. Beyer, vice chairman

15 June. J. E. Mayer, "Current status of the theory of liquids"; S. A. Rice, "Transport theory"; F. C. Collins, "Transport theory."

16 June. M. Fixman, "Acoustical model of momentum transport"; W. W. Wood, "Machine computations of equation of state"; T. Wainwright, "Machine computations of phase transitions"; H. Reiss, "Statistical mechanics of rigid spheres."

17 June. J. Ross, "Transport theory"; D. Turnbull, "Glass formation"; J. H. Gibbs, "Theory of glass formation."

18 June. G. H. Vineyard, "Neutron scattering and atomic motions in liquids"; B. N. Brockhouse, "Neutron scattering"; E. W. Hart, "Spatial correlation of fluctuations."

19 June. F. Stillinger, "Theory of fused salts"; B. Alder, "Studies of phase transitions by shocks."

Chemistry and Physics of Coal

Henry C. Howard, chairman

John Mackay, vice chairman

22 June. *Functional groups in coal* (E. F. Williams, chairman): P. H. Given; F. B. Brown and H. G. Davis; Sidney Friedman; L. Blom; H. Tschamler.

23 June. *Low-temperature reduction reactions* (Irving Wender, chairman): R. M. Eloffson; P. H. Given. G. R. Yohe, chairman: Irving Wender. *Polymeric character of coal*: J. P. Fugassi and Ruth Trammell.

24 June. *Optical and mass spectra* (R. A. Friedel, chairman): H. Tschamler; A. G. Sharkey; H. W. Holden, R. S. Montgomery.

25 June. *Structural methods in the study of coal and related products* (R. A. Glenn, chairman): D. S. Montgomery. *Structure of carbonaceous materials related to coal*: C. R. Kinney. *Physicochemical methods in the study of coal structure* (Sabri Ergun, chairman): Louis Robert; J. T. McCartney; V. H. Tiensuu.

26 June. Round-table discussion and plans for 1960 conference (John Mackay, chairman).

Proteins and Nucleic Acids

Stanford Moore and Hans Neurath, cochairmen

R. L. Sinsheimer, vice chairman

29 June-3 July. The scope of research on proteins and nucleic acids is becoming so wide that it is proving necessary to focus attention on one or the other subject in alternate years of this conference. The meeting will be devoted primarily to discussion of the structural chemistry of proteins. Among the speakers and leaders of discussions will be: C. B. Anfinsen, Jr., E. H. Fischer, B. S. Hartley, C. H. W. Hirs, E. Katchalski, I. M. Klotz, C. H. Li, R. R. Porter, F. M. Richards, F. Sanger, R. Schwyzler, E. L. Smith, H. A. Sober, and P. Wilcox. The discussion, which forms a major portion of these conferences, will be open to the presentation of a wide variety of recent results bearing on the structure of protein molecules.

Magnetic Resonance

Clyde A. Hutchison, Jr., chairman

George E. Pake, vice chairman

6 July. *High-resolution nuclear spectroscopy* (H. M. McConnell, chairman): G. V. D. Tiers and P. L. Panson, "A study of proton shielding values, τ , for ferrocenes and related compounds: comparison with the benzene analogs"; A. A. Bothner-By, "Inter- and intramolecular shieldings in organic compounds." W. A. Anderson, chairman: R. E. Richards, "Coupling constants in various stereochemical configurations of organic compound." Recent developments in high-resolution spectroscopy, round-table

discussion: P. Bender, J. C. Guffy. B. R. McGarvey.

7 July. *Population readjustment phenomena, nuclear polarization, and double resonance* (A. Abragam, chairman): G. E. Pake, "Nuclear polarization and resonance shifts in free radicals exhibiting electron exchange"; E. L. Hahn, "Pulsed nuclear double resonance"; N. Bloembergen, "Cross relaxation in spin systems." N. Bloembergen, chairman: G. Feher, "Nuclear orientation schemes in paramagnetics with resolved hyperfine interactions"; A. Abragam, "Dynamic polarization of Si²⁹ in silicon."

8 July. *Reaction rates and dissociation in solution* (G. C. Hood, chairman): W. G. Schneider, "NMR studies of some nuclear exchange processes"; H. S. Gutowsky, "Proton exchange and molecular association in solutions"; J. Itoh, "NMR studies of aqueous solutions of alkali halides." *Electronic resonance in crystals* (H. S. Jarrett, chairman): H. M. McConnell, "Paramagnetic resonance of oriented radicals"; L. Helmholz, "Paramagnetic resonance spectra of chromium and manganese hexafluoride ions and their electronic structure"; C. A. Hutchison, Jr., "Paramagnetism of phosphorescent naphthalene."

9 July. *Molecular motion and nuclear resonance* (W. P. Slichter, chairman): C. M. Huggins, "Structure and molecular motion in complex polymeric systems"; K. M. Sinnott, "Nuclear magnetic resonance and molecular motions in a series of acrylic polymers"; W. P. Slichter, "Hindered motion in solid polymers." *Chemical applications of nuclear resonance* (S. I. Weissman, chairman): B. Commoner, "Electron spin resonance studies of biochemical and biological systems"; S. I. Weissman, "Interactions between weakly coupled systems."

10 July. *Electronic resonance in irradiated systems* (W. Känzig, chairman): M. Matheson, "Electron spin resonance in irradiated rigid organic materials"; G. D. Watkins, "Paramagnetic resonance in electron irradiated silicon and germanium"; R. Livingston, "Electronic resonance in gamma-irradiated substances at low temperatures (recent atomic hydrogen and single crystal results)."

Organic Reactions and Processes

Robert I. Stirton, chairman

William J. Bailey, chairman-elect

13 July. R. I. Stirton, introductory remarks; Harold Zaugg, "Specific solvent effects in the alkylation of enolate anions—alkylation of sodiomalonate esters"; Herbert C. Brown, "Selective reductions."

14 July. Ernest L. Eliel, "Reductions with lithium aluminum hydride—aluminum chloride"; Oscar L. Wright, "Ion-exchange resins as reagents in organic

reactions"; Michael J. S. Dewar, "Aromatic rearrangements."

15 July. Fausto Ramirez, "New synthetic applications and mechanisms of reactions of esters of phosphorous acid"; S. A. Buckler, M. Grayson, M. M. Rauhut, V. P. Wystrach, "Studies in the formation of carbon-phosphorus bonds"; D. J. Hadley, "The production and uses of nitriles."

16 July. William E. Truce, "Stereo-specific reactions of nucleophilic sulfur compounds with chloroethylenes and acetylenes"; Norman A. Rosenthal, "Mechanism of the alkali cleavage of alkyl disulfides"; Ellis K. Field, "Air oxidation of aromatics by a new liquid-phase process."

17 July. Calvin L. Stevens, "Epoxyethers."

Microbiological Deterioration

Charles C. Yeager, *chairman*

Lloyd R. Snoke, *vice chairman*

20 July. *Marine microbiological deterioration* (Lloyd R. Snoke, *chairman*): R. Y. Morita, "Microbial activity in the deep sea with reference to corrosion"; Douglas Marsland, "Pressure as a physiological factor in the deep-sea environment"; T. W. Johnson, Jr., "Ecology of marine and estuarine fungi"; R. A. MacLeod, "The nutrition and metabolism of marine bacteria."

21 July. *Antibiotics for nonmedical use* (Curt Leben, *chairman*): P. W. Brian, "Metabolic interrelations between soil microorganisms in relation to their saprophytic and plant-parasitic activities"; J. C. Lewis, "Antibiotics and the preservation of food"; S. H. Ross, "Antibiotics and the preservation of material"; Curt Leben, "Antibiotics and plant disease."

22 July. *Cytological study of deterioration* (Charles C. Yeager, *chairman*): Mary Mandels, "The induction of cellulase in fungi"; Blanche R. Porter, "Effect of cellulase on cotton fiber microstructure"; Donald D. Ritchie, "Reaction of fungus cells to some environmental variables"; A David Baskin, "Kinetics of deterioration"; Ellis Cowling, "Structural aspects of the deterioration of wood and natural fibers."

23 July. *Physiology of spore formation and germination* (Saul Rich, *chairman*): Alfred Sussman, "Germination of *Neurospora* ascospores"; Gabriel Mandels, "Germination of *Myrothecium* spores"; Vincent W. Cochrane, "Physiological differences between spores and mycelium"; Edward Cantino, "Physiology of spore formation in *Blastocladiella*."

24 July. *Physiology of spore formation and germination* (continued) (Saul Rich, *chairman*): W. S. Nickerson, "Cellular division in yeast"; W. D. McClellan, "Effect of light on spore formation."

Radiation Chemistry

Warren M. Garrison, *chairman*

Max Matheson, *vice chairman*

27 July. R. L. Platzman, "Degradation spectra and their role in determining the abundance of various primary products"; R. W. Nicholls, "Spectroscopic study of luminosities produced by ionizing radiation in gases"; B. Brocklehurst, "Luminescence of gases irradiated with x-rays"; H. Kallman, "Study of energy transfer through fluorescence and phosphorescence."

28 July. P. S. Rudolph, "Mass spectra of organic ions produced by 5-Mev alpha particles"; F. W. Lampe, "Hydrogen atom reactions initiated by ionizing radiations"; W. A. Wilson, subject to be announced; J. E. Willard, "Phase, temperature, and scavenger effects in the radiation chemistry of organic halides"; W. H. Hamill, "Evidence for electron capture in irradiated organic-liquid mixtures."

29 July. T. J. Hardwick, "Radiolysis of hexane"; A. S. Newton, "Effects of electronegative groups in radiolysis"; H. A. Dewhurst, "Radiation chemistry of siloxanes"; J. H. Baxendale, "Radiation chemistry of methanol"; G. O. Schenck, "Sensitization and constitution in photo- and radiation chemistry."

30 July. A. Chapiro, "Ionic chain reactions initiated by radiations"; A. Charlesby, "Ionic polymerization reactions"; H. Fricke, "Applications of electronic computers in the development of diffusion theory"; H. A. Schwarz, "Radical combination reactions in the radiolysis of water."

31 July. E. J. Hart, "Radiation chemistry of aqueous formic acid"; H. A. Mahlman, "Radiolysis of aqueous nitrate solutions."

Steroids and Related Natural Products

Gilbert Stork, *chairman*

E. J. Corey, *vice chairman*

3-7 Aug. E. J. Agnello, "Recent chemistry of corticosteroids"; D. Arigoni, subject to be announced; K. Bloch, "Studies of terpene biogenesis"; G. Büchi, "Aspects of alkaloid chemistry"; E. J. Corey, "Selective introduction of functional groups at a saturated, unactivated carbon atom"; M. J. Cron, "The chemistry of kanamycin"; A. Eschenmoser, subject to be announced; H. B. Henbest, "Directing effects in additions to unsaturated steroids"; H. H. Inhoffen, "Total synthesis of vitamin D₃"; H. G. Khorana, "Recent progress in the synthesis and structural analysis of polynucleotides"; W. S. Johnson, "Relative stabilities of boat and chair forms of cyclohexane ring systems"; S. M. Kupchan, "Chemistry of the hypotensive veratrum alkaloids"; J. Mein-

wald, "Elimination reactions of tropanes and related compounds"; G. Ourisson, "Ring-nor steroids"; S. W. Pelletier, "Certain aspects of the chemistry of the aconitum alkaloids"; R. B. Turner, "Structure and synthesis of cassia acid"; E. E. van Tamelen, subject to be announced.

Inorganic Chemistry

R. W. Mason, *chairman*

C. P. Haber, *vice chairman*

10-11 Aug. *Transition metal oxides* (Ephraim Banks, *chairman*): A. Magnéle, "Ordered and disordered phases in some transition metal oxide systems"; R. Ward, "Some anion-deficient phases among the ternary oxides"; F. J. Morin, "Electronic energy bands in the transition metal oxides"; G. H. Jonker, subject to be announced; H. Hoekstra and S. Siegel, "Structural chemistry of the uranium-oxygen system"; H. J. Borchartdt, "Mechanisms of reactions between some inorganic solids"; A. D. Wadsley, "A new series of structurally related oxide complexes of niobium"; speaker and subject to be announced.

12 Aug. *Composition control in molecular engineering* (Robert C. DeVries, *chairman*): D. H. Wilkins, "Preparation of pure inorganic materials using ion exchange techniques"; H. Samelson, "The growth of pure and doped ZnS crystals and effects of doping on some of their properties"; M. W. Shafer, "Composition control during growth and subsolidus changes in ferrite single crystals"; speaker and subject to be announced.

13-14 Aug. *Properties of solids in relation to their structures* (Seymour Geller, *chairman*): M. K. Wilkinson, "Magnetism"; J. M. Hastings and L. M. Corliss, "Magnetism"; J. H. Wernick and S. Geller, "Thermoelectricity"; J. C. R. Kelly, "Thermoelectricity"; B. T. Matthias, "Superconductivity"; J. K. Hulm, "Superconductivity."

Analytical Chemistry

John Mitchell, Jr., *chairman*

Charles N. Reilley, *vice chairman*

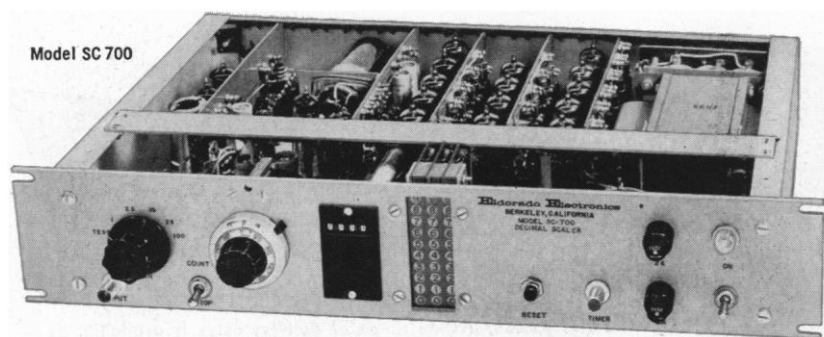
17 Aug. S. Dal Nogare, "Gas chromatography"; R. F. Goddu, "Near-infrared spectroscopy"; L. C. Jones, Jr., "Far-ultraviolet spectroscopy."

18 Aug. R. Belcher, "Elemental analysis"; F. E. Critchfield, "Functional group analysis."

19 Aug. L. Gierst, "Galvanostatic and potentiostatic methods." Discussion.

20 Aug. D. L. Wood, "Infrared spectroscopic methods for characterizing high polymers"; L. H. Phifer, "Decomposition of high polymers."

21 Aug. R. J. Keirs, "Fluorescence and phosphorescence."



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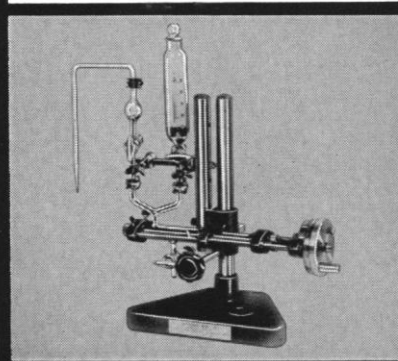
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Statistics in Chemistry and Chemical Engineering

Richard J. DeGray, *chairman*
George E. P. Box, *vice chairman*

24 Aug. John C. Whitwell, *chairman*:
Frank S. Riordan, Jr., "Evolutionary op-
erations." Ralph A. Bradley, *chairman*:
Hubert M. Hill, "Designs to compensate
for trends in time."

25 Aug. Henry Scheffe, *chairman*:
Otto Dykstra, Jr., "Partial duplication
of factorials." Frank W. Wehrfritz,
chairman: H. C. Hamaker, "On multi-
ple-regression analysis."

26 Aug. Mavis B. Carroll, *chairman*:
George E. P. Box, "Nonlinear estima-
tion." Harry Smith, Jr., *chairman*: Ga-
briel Kron, "Multidimensional curve fit-
ting with irregular polyhedrons."

27 Aug. Martin Wilk, *chairman*:
James L. Dolby, "Random balance."
S. Lee Crump, *chairman*: Carl A. Ben-
nett, "Fixed, mixed, and random mod-
els."

28 Aug. Hale Sweeny, *chairman*: H.
L. Lucas, "Change-over trials."

Adhesion

Alan A. Marra, *chairman*
Harold F. Wakefield, *vice chairman*

31 Aug. R. Oriani, "Surface behavior
as affected by internal organization of
solids"; B. G. Ranby, "Adhesion char-
acteristics of cellulosic materials."

1 Sept. J. E. Rutzler, "Surface prop-
erties and types of bonds involved";
W. E. Holland and J. D. Haygood,
"High temperature creep measurements
as a means of estimating surface free-
energy."

2 Sept. R. L. Patrick, C. A. Kumins,
and M. Gottlieb, "Molecular interac-
tions with the surfaces of solids"; R. R.
Stromberg, "Adsorption of polymers."

3 Sept. F. J. McGarry, "Factors af-
fecting adhesion of epoxy and polyester
systems to glass"; C. G. Caldwell, "Ad-
hesion properties of carbohydrate sys-
tems."

4 Sept. Mechanics of adhesive bonds:
A. F. Martin, "Influence of adhesive
physical properties on bonded-joint be-
havior"; D. K. Kaelble, "A general the-
ory of peel adhesion."

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Lipid Metabolism

Donald B. Zilversmit, *chairman*
Carleton R. Treadwell, *vice chairman*

15 June. Blood coagulation: T. H.
Spaet, "The role of lipids in blood co-
agulation"; A. J. Marcus, "Studies on
blood platelet phosphatides"; G. Rouser,
"The isolation and characterization of
phosphatidyl ethanolamine and its effect
on blood coagulation"; J. R. O'Brien,
"Lipids in coagulation phenomena in
vitro and in thrombosis"; R. L. Swank,
"The relation of transport of fats to their
physical state in blood."

16 June. *Metabolism of adipose tissue*: D. W. Fawcett, "Observations on the submicroscopic structure and metabolic responses of brown adipose tissue"; R. A. Liebelt, "Growth characteristics and lipid deposition in adipose tissue of mice"; B. Shapiro, "The mechanism of fat transport in adipose tissue and liver"; K. Bernhard, "Some aspects of the behavior of the polyenic fatty acids in the animal body"; J. F. Mead, "Hydrogenation of polyunsaturated fatty acids in biological systems."

17 June. *Role of lipids in enzyme activity*: D. E. Green, "The role of lipids in mitochondrial function"; F. L. Crane, "The function of coenzyme Q and other lipids in electron transport"; A. Nason, "The role of lipids in electron transport: tocopherol at the enzymatic level"; S. J. Wakil, "The mechanism of fatty acid biosynthesis"; D. D. Feller, "Incorporation of low-molecular-weight metabolites into lipids by slices of adipose tissue."

18 June. *Mechanisms of fat transport*: V. P. Dole, "The role of nonesterified fatty acids in fatty acid transport"; D. S. Fredrickson, "The in vivo metabolism of plasma UFA as determined by tracer experiments"; J. J. Spitzer, "Hormonal effects on release and uptake of UFA"; C. M. Radding, "In vitro synthesis of liver lipoprotein"; M. Rodbell, "The nature and metabolism of chylomicron proteins."

19 June. *Mechanisms of fat transport*: R. P. Geyer, "Utilization of emulsified lipids in vivo and in vitro"; J. Seifter, "The action of the lipid-mobilizing factor."

Physical Metallurgy

Thomas A. Read, *chairman*

Robert L. Fullman, *vice chairman*

Phase Transformations

22-26 June. J. W. Christian, "Martensitic transformations"; T. B. Massalski, "Certain features of transformations that resemble both the martensitic and the nucleation and growth types"; H. W. Paxton, "Interface-controlled transformations in solids"; J. W. Cahn, "The role of diffuse interfaces in transformation kinetics"; R. J. Weiss, "Relation of electron properties of α - and γ -iron to transformation behavior"; Larry Kaufman, "Lattice stability of metals"; Gilbert Speich, "Bainitic growth rates"; C. S. Smith, "Transformation and deformation in metals under explosive shock loading"; V. F. Zackay and J. C. Shyne, "Plastic properties of martensitic steels formed from cold-worked austenite"; W. W. Mullins, "An analysis of the linear cooperative problem as a mark-off process"; P. A. Flinn and G. McManus, "A Monte Carlo calculation of the order-disorder transformation in the body-centered cubic structure"; S. L. Quimby, "Ordering and disordering processes in Cu_3Au "; J. L. Walter, "Surface energy

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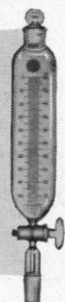
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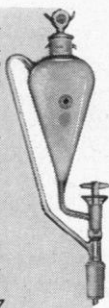


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mechanism for secondary recrystallization"; J. W. Rutter and K. T. Aust, "Grain boundary migration in high-purity metals"; A. G. Tweet, "Supersaturation effects in precipitation in semiconductors"; J. Mitchell, "Precipitation processes in crystals of silver halides"; Brian Berry, "Internal friction studies of precipitation"; L. S. Darken, "Interaction of interstitials with dislocations"; D. Turnbull, "Kinetics of clustering and Guinier-Preston zone formation in alloys"; H. S. Rosenbaum, "The role of dislocation loops in the precipitation of silicon from aluminum"; Mats Hillert, "Some viewpoints on the transformation of austenite."

Nuclear Chemistry

Morris L. Perlman, *chairman*

John O. Rassmussen, *vice chairman*

29 June–3 July. Survey of current problems in the study of nuclear reactions (low-energy region; high-energy region). The initial interaction: experimental evidence for compound nucleus formation and for direct interaction; theory and comparison with experimental results. Decay of compound system. High energy interactions. Heavy ion reactions. Fission.

Solid State Studies in Ceramics

W. D. Kingery, *chairman*

6 July. J. J. Gilman, "Dislocations and mechanical properties of nonmetal crystals"; S. Amelinckx, "Dislocation structure in nonmetal crystals."

7 July. R. J. Stokes, "The mechanical properties of MgO crystals"; G. R. Puliham, "The influence of environment on flow and fracture of single crystals."

8 July. J. B. Wachtman, Jr., "Damping capacity of polycrystalline ceramics"; R. M. Fulrath, "Polycrystalline and polyphase ceramics"; J. Selsing, "Fracture in polyphase ceramics."

9 July. G. R. Eusner, "Mechanical properties of basic brick"; W. J. Young, "Research studies on art forgeries."

10 July. C. C. Evans, "Mechanical properties of nonmetal whiskers." Discussion leaders: I. B. Cutler, P. Gibbs, A. E. Gorum, J. Gurland, M. L. Kronberg, T. S. Shevlin, T. L. Johnston, J. W. Mitchell, P. L. Pratt, R. Bacon, E. Ruh.

Chemistry, Physiology, and Structure of Bones and Teeth

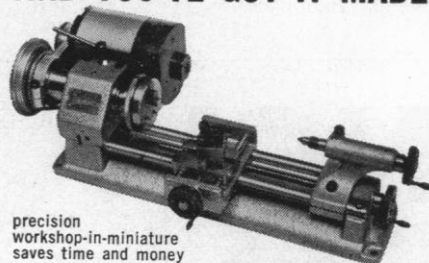
W. D. Armstrong, *chairman*

B. B. Migicovsky, *vice chairman*

13 July. *Invited short communications* (Felix Bronner, *chairman*). Bone as a mechanical tissue (Jonathan Cohen, *chairman*): G. H. Bell, "Bone as a problem in mechanical engineering."

14 July. F. G. Evans, "The relation of the microscopic structure of bone to its strength characteristics and other physical properties"; H. Hollingshaus, "Mechanical properties of bone from radium-

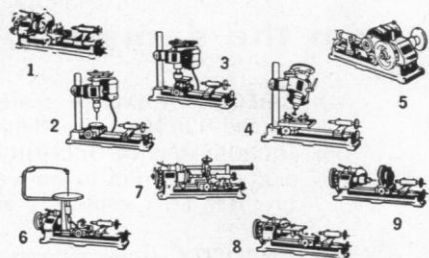
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poisoned dogs"; W. T. Dempster, "The distribution of osseous material in the mandible and humerus, and its mechanical importance"; M. G. Hardinge, "The transmission of weight through the knee joint." *Fluoride metabolism* (Harold C. Hodge, *chairman*): D. A. Greenwood, "Broad aspects of fluoride metabolism"; Yngve Ericsson, "Radiofluoride studies."

15 July. P. H. Phillips, "Bone retention of fluoride"; C. S. Hobbs, "Radiofluoride distribution in animals under chronic fluoride exposure"; E. J. Largent, "Urinary fluoride levels in relation to change in osseous radiopacity"; F. J. McClure,

"Fluoride content and the chemistry of human skeletal tissue"; C. H. Carlson, "Mechanisms of renal excretion of fluoride determined with radiofluoride"; Leon Singer, "Plasma fluoride concentrations in relation to fluoride intake." *New developments in methodology in study of calcified tissues* (D. Dziewiatkowski, *chairman*): Diego Carlström, "Some new aspects of ultrastructure of bone."

16 July. James Irving, "Histochemical changes at sites of calcification"; Richard Gruelich, "High-resolution microradiography"; Harold Schraer, "Quantitative

determination of bone mineral content and bone density in vivo from standardized roentgenograms." *Pathological physiology of bone and calcium metabolism* (Franklin C. McLean, *chairman*): G. Fanconi, "Idiopathic hypercalcemia."

17 July. Albert Dorfman, "Studies on acid mucopolysaccharides (Hurler's syndrome)"; Donald Fraser, "Hypophosphatasia"; Karl M. Wilbur, "Mechanisms of mineralization in mollusks."

Cell Structure and Metabolism

A. K. Solomon, *chairman*

Alan J. Hodge, *vice chairman*

Biological Membranes

20 July. *Structure and cellular aspects of membranes*: George E. Palade; Heinz Holter; Manfred L. Karnovsky.

21 July. *Molecular architecture of the membranes*: F. O. Schmitt; J. B. Finean; W. Stoeckenius; J. Lawrence Oncley; J. D. Robertson.

22 July. *Transport across cellular membranes*: Hans H. Ussing; John R. Pappenheimer A. K. Solomon; Paul Lefevre; Alan Hodgkin and Richard Keynes.

23 July. *Physics and chemistry of membranes*: George Scatchard; Torsten Teorell; R. Schlögl; Theodore Shedlovsky.

24 July. *Metabolic functions of membranes*: Albert L. Lehninger; Eric G. Ball; Philip Siekevitz.

A grant from the Muscular Dystrophy Associations of America and the Muscular Dystrophy Association of Canada has provided support for the travel of the foreign scientists.

Chemistry at Interfaces

Norman Hackerman, *chairman*

Herman E. Ries, *vice chairman*

27 July. *Metal-solution interfaces* (R. S. Hansen, *chairman*): R. S. Hansen, "Relaxation phenomena in the double layer"; Norman Hackerman, "The electrical double layer at solid metal-solution interfaces"; J. O'M. Bockris, "Adsorption of nonelectrolytes of metal-solution interfaces."

28 July. *Dispersions* (F. R. Eirich, *chairman*): E. Matijewic, "Formation of solid phases in electrolyte solutions"; J. J. Chessick, "Stability of dispersions in nonaqueous media"; A. J. Rutgers, "Ionic hydration in aqueous solutions."

29 July. *Adsorption* (R. A. Beebe, *chairman*): H. S. Taylor, "Aspects of chemisorption and catalysis"; G. H. Young, "Chemisorption studies from fuel cell potentials (applications of a new tool in chemisorption studies)"; D. H. Everett, "Adsorption hysteresis."

30 July. *Adsorption* (continued) (A. C. Zettlemoyer, *chairman*): J. R. Zimmerman, "Water vapor adsorption on silica gel by nmr techniques"; J. G. Aston, "Adsorption studies by nmr."

31 July. *Monolayers on liquids* (H. W. Fox, *chairman*): L. Jarvis, "Monolayers on nonaqueous substrates."

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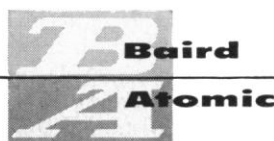
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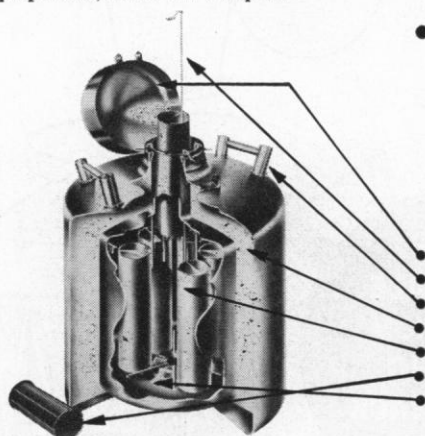


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George L. McNew and
Robert S. Bandurski, *cochairmen*

3 Aug. *The biochemical basis of ecological response* (Hubert Martin, *chairman*): Z. A. Patrick, "Root diffusates and decomposition products of plant residues as factors in crop ecology"; David Gottlieb, "The role of symbiosis and antibiosis in the soil community"; P. W. Brian, "Biochemical basis of microbial antagonisms in soil"; E. E. Smisson and S. D. Beck, "Biochemical basis of pathogenesis"; R. A. Ludwig, "The function of biologically active compounds in the growing plant in pathogenesis and defense mechanisms."

4 Aug. *Phosphorus in plant nutrition* (G. C. Bridger, *chairman*): D. R. Bouldin, "Chemical behavior and plant availability of phosphorus sources in relation to soil and fertilizer properties"; A. J. Ohlrogge, "Plant-nutrient uptake from fertilizer bands"; C. V. Cole, "Distribution of phosphorus in plants." *Metabolism of adenyl anhydrides* (Robert S. Bandurski, *chairman*): G. C. Webster, "Amino acid activation and protein synthesis"; R. S. Bandurski, "Sulfate activation and reduction."

5 Aug. *Chemistry and metabolism of nucleic acids* (Paul O. P. Ts'o, *chairman*): J. Herbert Taylor, "DNA and RNA synthesis"; Paul O. P. Ts'o, "Structure and properties of microsomal particles and their RNA"; P. C. Cheo, "Physical-chemical properties and infectivity of tobacco mosaic virus RNA"; K. K. Reddi, "Studies on tobacco mosaic virus nucleic acid." *Uridine diphosphate sugars and polysaccharide synthesis* (W. Z. Hassid, *chairman*): E. Neufeld, "Mechanism of sugar nucleotide synthesis in higher plants"; L. Glaser, "Polysaccharide synthesis from uridine linked sugars."

6 Aug. *The inhibition of metabolic functions by synthetic chemicals* (H. P. Burchfield, *chairman*): Paul H. Schuldt, "Activation of cyclic sulfones by dehydrochlorination"; Donald E. Moreland, "Biochemistry of herbicidal action including effects on the Hill reaction"; R. D. O'Brien, "Mechanism and significance of esterase inhibition by phosphates and carbamates." *Special conference addresses on the regulation of plant growth* (A. G. Norman, *chairman*): T. A. Bennet-Clark, "Possible mechanisms of plant growth regulation"; R. L. Wain, "Some chemical aspects of plant growth regulation."

7 Aug. *Effect of ionizing radiation on biochemical processes* (James L. Liverman, *chairman*): B. S. Schweigert, "Biochemical aspects for the radiation preservation of food"; Charles O. Doudney, "Macromolecular synthesis in the mutagenic and lethal effects of radiation in bacteria"; Henry Quastler, "Comparative radiosensitivity of living organisms."

Toxicology and Safety Evaluations

Don D. Irish, *chairman*

David W. Fassett, *vice chairman*

10 Aug. David W. Fassett, *chairman*: Irvin Blank, "Basic mechanisms of percutaneous absorption"; Albert A. Kondritzer, "Physical-chemical factors in the development of barrier materials"; Leonard J. Vinson, discussion. John A. Zapp, Jr., *chairman*: G. W. H. Schepers, "Pulmonary tissue changes induced by inhaled industrial dust."

11 Aug. Kingsley Kay, *chairman*: speaker and subject to be announced;

Henry F. Smyth, "Deriving tentative threshold limits from experimental data." Charles R. Williams, *chairman*: Charles Kensler, "Quantitative aspects of chemical carcinogenesis"; Miriam P. Finkel, "Quantitative aspects of radioisotope carcinogenesis."

12 Aug. Eugene H. Krackow, *chairman*: Eugene H. Krackow, "Extension of laboratory toxicological data to the field of industrial medicine"; C. Boyd Shaffer, "Prospectively"; W. Clark Cooper, "Retrospectively." Norton Nelson, *chairman*: George M. Knauf, "Bio-

logical effects of microwave energy." Film, "Medical aspects of missile operations."

13 Aug. Horace Gerarde, *chairman*: Joseph H. Gast, "The biological effects of chemical agents on in vitro systems." Bernard L. Oser, *chairman*: H. van Genderen, "Interpretation of toxicological data in animals for the determination of acceptable levels for intake in man."

14 Aug. Geoffrey Woodward, *chairman*: Frederick S. Phillips and Stephen S. Sternberg, "Experimental and clinical toxicity of cancer chemotherapeutic agents"; William Layton, "Some problems in evaluation of the safety of drugs."

Chemistry and Physics of Metals

George H. Vineyard, *chairman*

Warren DeSorbo, *vice chairman*

Lattice Dynamics

17 Aug. P. M. Marcus, "Specific heats and vibration spectra"; J. A. Morrison, "Present status of low-temperature specific-heat measurements"; J. A. Krumhansl, "Microscopic theories of elasticity as tested in anisotropic substances—graphite."

18 Aug. B. N. Brockhouse, "Inelastic neutron scattering—Chalk River results"; H. Palevsky, "Inelastic neutron scattering—Brookhaven results"; M. Lax, "Long-range forces and lattice vibrations in germanium"; E. Burstein, "Infrared observations and lattice dynamics."

19 Aug. H. B. Rosenstock, "Far-infrared lattice absorption"; W. C. Overton, Jr., "Vibration spectra and critical points in F.C.C. lattices with nearest and next-nearest neighbor interactions"; J. DeLaunay, "Vibration spectrum calculations"; A. Maradudin, "Effects of defects and disorder on vibrational properties of crystals."

20 Aug. G. Leibfried, "Recent developments in the theory of anharmonic effects"; M. Blackman, "Thermal expansion"; R. W. Morse, "Acoustic observations of phonon-electron interactions."

21 Aug. C. Herring, "Phonon-drag effects"; M. Walsh, "Spin-phonon interactions."

Photonuclear Reactions

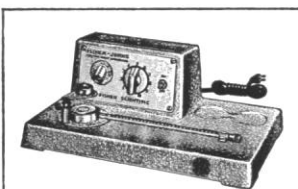
Peter Axel and

A. O. Hanson, *cochairmen*

24-28 Aug. E. G. Fuller and R. B. Duffield, "Systematics of photonuclear reactions." Current experimental programs. M. Danos, D. H. Wilkinson, "Theory of photonuclear reactions." Energy levels in light nuclei. Theoretical interpretation of light nuclei. Bremsstrahlung and non-nuclear gamma ray interactions. Photonuclear and inverse reactions (experimental). Theoretical interpretation of inverse reactions. Remaining uncertainties and controversies.



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Molten Salts

B. R. Sundheim, *chairman*
Dieter Gruen, *vice chairman*

31 Aug. H. Flood, M. Blander, "Activity"; F. R. Duke, "Kinetics."

1 Sept. J. O'M. Bockris, "Transport properties"; B. R. Sundheim, "Transference."

2 Sept. D. M. Gruen, "Spectrophotometry"; G. Janz, "Raman spectra x-ray."

3 Sept. D. D. Cubicciotti and M. Bredig, "Metals in molten salts."

4 Sept. L. Brewer and R. Porter, "High-temperature chemistry."

Forthcoming Events

April

2-3. Electrical Applications for the Textile Industry, AIEE conf., Atlanta, Ga. (N. S. Hibshman, AIEE, 33 W. 39 St., New York 18.)

2-3. Radioisotopes in Agriculture, 4th conf., Stillwater, Okla. (J. H. Jensen, Associated Midwest Universities, Iowa State College, Ames.)

3-4. Marine Biology, 20th annual, Corvallis, Ore. (J. E. McCauley, Dept. of Zoology, Oregon State College, Corvallis.)

5-9. International Acad. of Proctology, 11th annual, New York, N.Y. (A. J. Can-

tor, IAP, 147-41 Sanford Ave., Flushing 55, N.Y.)

5-10. American Chemical Soc., 135th, Boston, Mass. (M. A. H. Emery, 18th and K St., NW, Washington, D.C.)

5-10. Nuclear Congress, Cleveland, Ohio. (S. Baron, Burns & Roe, Inc., 160 West Broadway, New York 13.)

6. Paleontological Research Institution, Ithaca, N.Y. (R. Harris, 109 Dearborn Rd., Ithaca.)

6-7. Chemical and Petroleum Instrumentation, 2nd natl. symp., St. Louis, Mo. (H. S. Kindler, Director of Technical and Educational Services, ISA, 313 Sixth Ave., Pittsburgh 22, Pa.)

6-8. American Radium Soc., Hot Springs, Va. (R. L. Brown, Robert Winship Clinic, Emory Univ., Atlanta 22, Ga.)

6-8. National Open Hearth Steel Furnace, Coke Oven and Raw Materials Conf., St. Louis, Mo. (E. O. Kirkendall, AIME, 29 W. 39 St., New York 18.)

6-9. American Acad. of General Practice, San Francisco, Calif. (M. F. Cahal, Volker Blvd. at Brookside, Kansas City 12, Mo.)

6-11. Coordination Chemistry, intern. conf., London, England. (Chemical Soc., Burlington House, London, W.1.)

8. Evolution of Cell Populations, conf. (by invitation), Atlantic City, N.J. (D. C. Hetherington, Dept. of Anatomy, Duke Univ. School of Medicine, Durham, N.C.)

8-9. Tissue Culture Assoc., 10th annual, Atlantic City, N.J. (D. C. Hetherington, Dept. of Anatomy, Duke Univ. School of Medicine, Durham, N.C.)

10-11. Society for the Scientific Study of Religion, Chicago, Ill. (W. H. Clark, SSSR, Hartford Seminary Foundation, Hartford 5, Conn.)

10-16. Mental Health, 2nd Caribbean conf., St. Thomas, Virgin Islands. (Mrs. E. L. M. Shulterbrandt, Bureau of Mental Health, St. Thomas, V.I.)

12-13. American Soc. for Artificial Internal Organs, Atlantic City, N.J. (C. K. Kirby, ASAIO, 110 Maloney Bldg., University Hospital, 3600 Spruce St., Philadelphia 4, Pa.)

12-14. Atomic Mechanisms of Fracture, conf., Cambridge, Mass. (D. K. Felbeck, Natl. Acad. of Sciences-Natl. Research Council, 2101 Constitution Ave., NW, Washington 25.)

12-15. Neurosurgery, 8th Latin American cong., Santiago, Chile. (A. Asenjo G., Casilla 70-D, Santiago, Chile.)

12-16. American Physiological Soc., Atlantic City, N.J. (R. C. Daggs, 9650 Wisconsin Ave., Washington, D.C.)

12-16. Fracture, intern. conf., Cambridge and Dedham, Mass. (Headquarters, Air Force Office of Scientific Research, Washington 25.)

13. Biochemical Cytology of Liver (Histochemical Soc.), symp., Atlantic City, N.J. (A. B. Novikoff, Dept. of Pathology, Albert Einstein College of Medicine, Yeshiva Univ., Eastchester Rd. and Morris Ave., New York 61.)

13-15. Hydraulics Conf. (American Soc. of Mechanical Engineers), Ann Arbor, Mich. (O. B. Schier, ASME, 29 W. 39 St., New York 18.)

13-17. American Assoc. of Immunolo-

Millipore BRIEF #241

Colorimetric Determination of Siliceous Atmospheric Contaminants.

Particulate silica and silicates are collected on membrane filters, dissolved in hydrofluoric acid, and determined colorimetrically as yellow silicomolybdate or as molybdenum blue after reduction with 1-amino-2-naphthol-4-sulfonic acid. The dual sensitivity obtained by the use of the two colors permits accurate analyses in the relatively large range of 1 microgram to 2.5 milligrams without the necessity of taking an aliquot. The small air volumes required are easily sampled with hand-operated equipment.

Talvitie, N. A. and Hyslop, Frances
American Industrial Hygiene Association Journal,
9(1)54-58, Feb., 1958

Millipore BRIEF #249

Axonal Regeneration in the Transected Adult Feline Spinal Cord.

A readily reproducible technique has been evolved for obtaining orderly linear, axonal regeneration across transection gaps in the adult feline spinal cord. The results of this study largely parallel the pattern of regeneration obtained in previous research with peripheral nerves in which a woven nylon tube impregnated with porous Millipore filter material is used to encase the stumps of severed nerves to provide a scaffold for growth of cells and axons.

Campbell, J. B., Bassett, C. A. L.,
Husby, J. and Noback, C. R.
Surgical Forum, Vol. VIII, 1958

Millipore BRIEF #254

Exfoliated Cytology of the Urinary Tract: A New Approach with Reference to the Isolation of Cancer Cells and the Preparation of Slides for Study.

A new Millipore filter technique for the retention of cells to be stained by hematoxylin and eosin, and Papanicolaou and other staining methods has been reported. This new technique eliminates the unsatisfactory smears due to lack and loss of cells in urinary tract exfoliated cytology which previously have been reported as high as 58 per cent in proved cases of exfoliating cancer of the bladder, ureter or renal pelvis.

Solomon, C., Amelar, R., Hyman, R. M.,
Chaiban, R., and Europa, D. L.
The Journal of Urology, 80(5)374-382, Nov., 1958

Millipore BRIEF #243

The Preparation of Tuberculous Sputum for Membrane Filter Filtration.

A technique is described by which tubercle bacilli in a sputum sample, prepared by enzyme (Pangestin) digestion and simultaneous decontamination (Zephiran, polymyxin) are sequestered into a hydrocarbon (n-octane) phase by vigorous shaking. The n-octane phase, freed of sputum debris and most of the saprophytic organisms, is filtered in turn through a membrane filter (or filters) to collect the tubercle bacilli for culture on the membrane surface.

McKinney, Ruth A.
The American Review of Tuberculosis and Pulmonary Diseases, 77(6)10 19-1022, June, 1958

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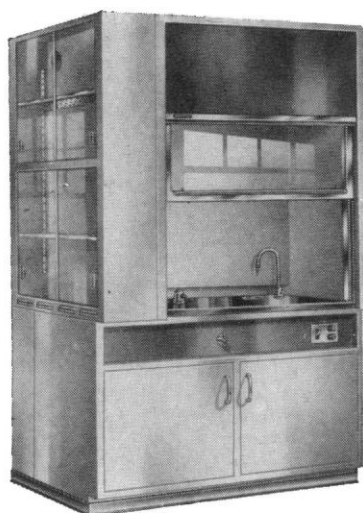
- 50 million capillary pores of precise size per sq. cm. of surface area.
- Absolute surface retention of all particles larger than pore size.
- Pores are 80% of total filter volume, permitting high flow rates.
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gists, Atlantic City, N.J. (C. Howe, 630 W. 168 St., New York 32.)

13-17. American Inst. of Nutrition, Atlantic City, N.J. (G. M. Briggs, NIAMD, Room 9D20, Bldg. 10, National Institutes of Health, Bethesda, Md.)

13-17. American Soc. for Pharmacology and Experimental Therapeutics, Atlantic City, N.J. (H. Hodge, Univ. of Rochester, Rochester 20, N.Y.)

13-18. American Acad. of Neurology, Los Angeles, Calif. (J. M. Foley, Boston City Hospital, Boston, Mass.)

13-18. American Soc. of Biological Chemists, Atlantic City, N.J. (F. W. Putnam, Univ. of Florida Medical School, Gainesville.)

13-18. American Soc. for Experimental Pathology, Atlantic City, N.J. (J. F. A. McManus, Univ. of Alabama Medical Center, Birmingham 3.)

14-15. Electrical Heating Conf. (American Institute of Electrical Engineers), Philadelphia, Pa. (N. S. Hibshman, AIEE, 33 W. 39 St., New York 18.)

14-16. Faraday Soc. (Energy Transfer), Nottingham, England. (Faraday Soc., 6 Gray's Inn Sq., London, W.C.1, England.)

14-16. Life Span of Animals, 5th colloquium on aging, London, England. (Ciba Foundation, 41 Portland Pl., London, W.1.)

14-16. Rheology of the Glassy State (British Soc. of Rheology), Sheffield, England. (D. W. Saunders, British Rayon Research Assoc., Heald Green Laboratories, Wythenshawe, Manchester 22, England.)

15-17. American Assoc. of Genito-Urinary Surgeons, Absecon, N.J. (W. J. Engel, 2020 E. 93 St., Cleveland 6, Ohio.)

15-17. American Surgical Assoc., San Francisco, Calif. (W. A. Altemeier, Cincinnati General Hospital, Cincinnati 29, Ohio.)

15-17. Midwest Benthological Soc., annual, Hickory Corners, Mich. (C. M. Fetterolg, Jr., Water Resources Commission, Sta. B, Lansing 13, Mich.)

16-18. American Assoc. of Railway Surgeons, Chicago, Ill. (C. C. Guy, 5800 Stony Island Ave., Chicago 37.)

16-18. Association of South Eastern Biologists, Knoxville, Tenn. (H. J. Humm, Dept. of Botany, Duke Univ., Durham, N.C.)

16-18. Ohio Acad. of Sciences, Columbus. (G. W. Burns, Ohio Wesleyan Univ., Delaware.)

16-18. Southern Sociological Soc., 22nd annual, Gatlinburg, Tenn. (S. C. Mayo, North Carolina State College, Raleigh.)

16-30. Engineering, Marine, Welding and Nuclear Energy Exhibition, 22nd, Olympia, London. (F. W. Bridges & Sons, Ltd., Grand Buildings, Trafalgar Square, London, W.C.2, England.)

17. Current Developments in the Production of High Vacua, symp., London, England. (Institute of Physics, 47 Belgrave Square, London, S.W.1.)

17-18. American Mathematical Soc., Monterey, Calif. (E. G. Begle, Leet Oliver Hall, Yale Univ., New Haven, Conn.)

17-18. American Mathematical Soc., Chicago, Ill. (E. G. Begle, Leet Oliver Hall, Yale Univ., New Haven, Conn.)

(See issue of 20 February for comprehensive list)