

From these results two proteins are inferred to play a role in the regulation of DNA replication. One of these, which is formed during thymine starvation, may be the initiator postulated by Jacob and Brenner; its formation seems to be specifically blocked by an inhibitor which contains thymine. The other, which is synthesized even in the presence of chloramphenicol, may be a structural protein necessary for the attachment of the DNA to the cell surface layers as called for by Jacob and Brenner's model.

Forro described yet another experimental system for studying DNA replication in vivo. Forro and his associates label the DNA of *E. coli* with H^3 -thymine and then carry out radioautography of clones derived from single labeled cells. The segregation of labeled DNA among daughter cells grown on nonradioactive medium provides some insight into the organization and mode of replication of DNA within cells. Experiments were also described in which the radioautography was carried out on clones arising from zygotes that had received DNA from labeled males.

The data presented by Forro are consistent with a model of semiconservative replication, the units of replication having a molecular weight of 2 to 3×10^9 . In many cases, a dispersion of label in the clone was observed, which can be explained by random crossing over between sister chromosomes with a frequency of about 0.5 per chromosome per generation. The transfer experiments with Hfr cells indicate that two-stranded DNA is transferred; in the case of $F^+ \times F^-$ crosses, many clones showed only a single labeled unit, as if only one of the two transferred strands had been labeled. Finally, a correlation was shown between the amount of chromosome transferred as measured genetically and as measured by radioautography.

The material presented by Meselson, Brenner, Lark, and Forro was summarized by E. A. Adelberg, who pointed out that all of the work presented was carried out in vivo, and that the models inferred have far out-run the ability of experiments in vitro to demonstrate the existence and nature of the postulated substances (enzymes, initiators, replicators, attachment sites) which act to control DNA replication and recombination.

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Winter Gordon Research Conferences

The Winter Gordon Research Conferences will be held from 25 January to 5 February 1965 in Santa Barbara, California, at the Miramar Hotel and at the Santa Barbara Biltmore Hotel. The purpose of the Gordon Research Conferences is 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. 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 subjects under discussion. The Summer Conferences are held in New Hampshire [*Science* 143, 1203 (1964)].

Registration and reservations. Attendance at the conferences, limited to approximately 100, is by application. Individuals interested in attending the Conferences are requested to send their applications to the office of the director. *Applications must be submitted in duplicate on the standard form, which may be obtained from the office of the director.* The applications will be reviewed by the Conference Committee. This committee in selecting the participants will distribute the attendance as widely as possible among the institutions and laboratories represented by the applications. A registration card will be mailed to those selected. Advance registration by mail is required; this is completed when the registration card with a deposit of \$25 is received in the office of the director. A registration card not accompanied by the \$25 deposit will not be accepted. This advance deposit is not required of scientists from foreign countries.

A fixed fee of \$125 has been established for resident conferees and covers registration, double room with bath, City of Santa Barbara room tax, meals,

and gratuities for five conference days. There will be an additional charge for a single room and for rooms occupied more than the five conference nights (Sunday through Thursday). This fee was established to encourage attendance for the entire conference and to increase the Special Fund that is available to the Conference Chairmen for assisting participants who attend the conference wholly or in part at their own expense.

The participants are expected to live at the conference location because one of the objects of the conference is to provide a place where scientists can get together informally to discuss scientific research. All participants are urged to attend the conference for the entire week. Under special circumstances conferees will be permitted to stay at locations other than the site of the Conference. Such nonresident conferees will be charged a registration fee of \$60.

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 fixed fee. *Application for this special fee must be made at the conference office during the conference.*

Accommodations are available for wives who wish to accompany their husbands, and for children 12 years of age and over. All such requests should be made at the time the attendance application is submitted. The charge for room and meals for a guest is \$75.

Cancellation. The \$25 deposit is forfeited if an approved application for attendance at the conference is cancelled.

Attendance. Requests for application forms for attendance at the Conferences, or for additional information, should be addressed to W. George Parks, Director, Gordon Research Conferences, University of Rhode Island, Kingston.

Miramar Hotel

Electrochemistry: Electrode Processes

Richard P. Buck and Ernest Yeager will serve as *chairman* and *vice chairman*, respectively.

25 January. Roger Parsons, "The structure of the double layer at electrodes"; David M. Mohilner, "Comparative double layer studies"; James

N. Butler, "The electrical double layer at amalgam electrodes."

26 January. John O'M. Bockris, "Anodic oxidation with special reference to hydrocarbons"; Eleizer Gileadi, "Potential dependent adsorption of uncharged molecules on solid electrodes"; Pierce W. Selwood, "Implications of the magnetic and other methods for studying vapor phase adsorption on metals"; Andrew Streitwieser, Jr., "Physical organic chemistry and organic polarography."

27 January. Jiri Koryta, "Polarographic rate-controlled currents, volume reactions, and the influence of adsorption"; Irving Shain, "Experimental approaches to the investigation of chemical reactions coupled to charge transfers"; Ralph N. Adams, "New applications of EPR to organic electrode processes and homogeneous electron exchange reactions."

28 January. Ward B. Schaap, "Techniques for nonaqueous electrochemistry"; "Interpretation of electrochemical measurements in nonaqueous solvents"; Charles W. Tobias, "Scale-dependent electrode phenomena". Planning session for the next conference.

29 January. Informal discussion including roundtable discussion on the fundamental rate equation of electrochemical kinetics, interpretation of potential barriers, and the parameters of electrode kinetics.

Polymers

Ralph Milkovich and Paul J. Flory will serve as *chairman* and *vice chairman*, respectively.

1 February. H. F. Mark, "Recent advances in polymer chemistry"; S. Okamura, "Benzoyl peroxide-induced cationic polymerization of cyclic ethers"; M. Morton, "Mechanism of stereospecific polymerization of butadiene in aqueous media."

2 February. J. W. Breitenbach, "Formation of micro oriented polymers by popcorn growth"; E. A. Youngman and J. Boor, Jr., "Details of the growth site in stereospecific Ziegler polymerization of olefins"; M. Goodman, "Configurations, conformations, and constellations of polymer structure."

3 February. O. Kratky, "X-ray small angle studies with dissolved and solid high polymers"; R. S. Stein, "The rheo-optics of crystalline polymers"; A. M. Liquori, "Conformational analysis of helical polymers and biopolymers."

4 February. S. S. Sternstein and L. Cessna, Jr., "The fracture of semi-ductile viscoelastic media"; R. F. Landel and R. Fedors, "Tensile rupture in amorphous elastomers"; R. P. Kambour, "The role of crazing in the mechanism of fracture of glossy polymers."

5 February. J. Moacanin, "Polymeric semi-conductors"; A. Rembaum, "Anionic degradation of vinyl aromatic polymers."

Santa Barbara Biltmore Hotel

Chemistry of Aging

Steven M. Horvath will serve as *chairman*.

25 January. "Aging: a normal or pathological process." "Cellular aging."

26 January. "Cellular aging" (continued). "Molecular and biochemical individuality."

27 January. "Auto-immunity in aging cells." "Chromosomal instability."

28-29 January. "Nutritional aspects of aging" (general).

A complete program will be available on 15 December 1964.

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Forthcoming Events

December

4-6. American **Psychoanalytic** Assoc., fall meeting, New York, N.Y. (APA, 1 E. 57 St., New York 10022)

4-9. American Acad. of **Dermatology**, Chicago, Ill. (S. E. Huff, AAD, 636 Church St., Evanston, Ill.)

5-6. Academy of **Psychoanalysis**, mid-winter meeting, New York, N.Y. (A. H. Rifkin, AP, 125 E. 65 St., New York)

6. American Acad. of **Dental Medicine**, mid-annual meeting, New York, N.Y. (S. C. Conrad, 133-28 228th Street, Laurelton, Long Island, N.Y.)

6-10. American Inst. of **Chemical Engineers**, annual, Boston, Mass. (J. Henry, AICHE, 345 E. 47 St., New York 10017)

6-12. Latin American Congr. on **Microbiology**, 3rd, Bogota, Columbia. (O. Juliao, Instituto Nacional de Salud, Aptdo, Aereo 3495, Bogota)

7. American Institute of **Mining, Metallurgical and Petroleum Engineers**, annual, Tucson, Ariz. (H. N. Appleton, AIME, 345 E. 47 St., New York 10017)

7-9. Performance of **High Temperature Systems**, Pasadena, Calif. (G. S. Bahn, 16902 Bollinger Dr., Pacific Palisades, Calif. 90272)

7-9. Southern **Surgical Assoc.**, meeting,

Hot Springs, Va. (G. H. Yeager, University Hospital, Baltimore 1, Md.)

7-11. Chemical Effects Associated with **Nuclear Reactions and Radioactive Transformations**, symp., Vienna, Austria. (P. Ghelardoni, Div. of Scientific and Technical Information, International Atomic Energy Agency, Karntnerring 11, Vienna 1)

8-9. Ciba Foundation Guest Symposium on **Measurement of Oxygen Tension**, London, England. (Ciba Foundation, 41 Portland Pl., London, W.1)

8-11. American Soc. of **Agricultural Engineers**, New Orleans, La. (J. L. Butt, ASAE, 420 Main St., St. Joseph, Mich.)

9. **Space Astronomy**, Washington, D.C. (S. Koslov, Nuclear Test Detection, Advanced Research Projects Agency, Washington, D.C. 20301)

9-11. **Antiviral Substances**, conf., New York Acad. of Sciences, New York, N.Y. (B. K. Forscher, Publications Section, Mayo Clinic, Rochester, Minn.)

11-12. **Cell Replication**, symp., New York Univ. School of Medicine, New York, N.Y. (Dean, New York Univ. School of Medicine, New York 10016)

12-15. American Acad. of **Optometry**, annual, Columbus, Ohio. (C. C. Koch, AAO, 1506-08 Foshay Tower, Minneapolis 2, Minn.)

14-16. **Hahnemann Medical College**, 13th symp., Philadelphia, Pa. (J. H. Moyer, Dept. of Medicine, Hahnemann Medical College, Philadelphia)

14-16. **Reticuloendothelial Soc.**, meeting, New York, N.Y. (N. R. Di Luzio, Univ. of Tennessee Medical Units, Memphis)

14-17. **Adipose Tissue Metabolism and Obesity**, conf., New York, N.Y. (B. N. Brodoff, New York Acad. of Sciences, 2 E. 63 St., New York)

14-18. Conference on **Nuclear Electronics**, Bombay, India. (International Atomic Energy Agency, Karntnerring 11, Vienna 1, Austria)

14-22. **International Geological Congr.**, 22nd, New Delhi, India. (Secretary-General of the Congress, c/o Geological Survey of India, 27, Chowringhee, Calcutta 13)

14-22. **International Mineralogical Assoc.**, 4th general, New Delhi, India. (J. V. Smith, c/o Dept. of Geophysical Sciences, University of Chicago, Chicago, Ill.)

15-16. **Periodic Functions in Live Matter**, Czechoslovak Meteorological Soc., conf., Prague. (J. Novak, First "Prof. Konopik" Dermatology Clinic, Prague 2, Apolinarska 4)

15-18. **High Energy Astronomy**, symp., Univ. of Texas, Austin. (Office of Aerospace Research, 4th and Independence Avenue, SW, Washington, D.C. 20233)

15-18. **Relativistic Astrophysics**, symp., Univ. of Texas and Southwestern Center for Advanced Studies, Austin. (Mrs. J. Wardlaw, Dept. of Physics, Physics Bldg. 438, Univ. of Texas, Austin 78712)

16-21. Inter-American Congr. of **Psychology**, 9th annual, Miami, Fla. (V. D. Sanua, Yeshiva Univ., 110 W. 57 St., New York 10019)

20-24. **Theoretical and Applied Mechanics**, congr., Kanpur, India. (M. K. Jain, Indian Inst. of Technology, Kharagpur, India)

21-23. American **Physical Soc.**, Berke-