

chromosome was described by N. Davidson (California Institute of Technology), and the application of these techniques to the study of structural relationships between *Col* factors was discussed by J. Inselburg (Dartmouth Medical School). The application of heteroduplexing techniques in conjunction with the development of conditions for transformation of *E. coli* with plasmid DNA as reported by S. N. Cohen (Stanford University) and the use of specific restriction endonucleases as described by H. Boyer (University of California, San Francisco) promise to elucidate the structural relationships between sex factor, *Col* factor, and *R* factor plasmids. In addition to these types of plasmid elements, the detection of circular DNA elements with unknown function in bacteria was reported by several of the participants. Studies on a particularly striking example of cryptic plasmid elements, the circular DNA elements in *Bacillus megaterium* strains, were described by B. Carlton (University of Georgia).

A substantial portion of the conference was devoted to a consideration of the genetic and biochemical factors responsible for plasmid DNA replication. Recent work on a very promising model system for the study of plasmid DNA replication, the defective bacteriophage  $\lambda$ dv of *E. coli*, was presented by K. Matsubara (Kyushu University). The effect of the growth medium and various metabolic inhibitors on the replication of *Col* and *R* factors was described by R. Clowes (University of Texas, Dallas), D. Clewell (University of Michigan), and J. PUNCH. The effect of chromosomal DNA replication mutations on plasmid DNA synthesis was explored by R. Clowes and D. Korn (Stanford University). Mutations specifically affecting the replication of penicillinase plasmid DNA in *Staphylococcus aureus* were described by R. Novick (Public Health Research Institute, New York). Observations on an unexpected class of mutations that result both in altered ribosomal proteins and sex-factor replication were presented by H. Uchida (University of Tokyo). The properties of relaxation complexes of plasmid DNA and protein and the possible role of these complexes in plasmid DNA replication were reviewed by D. Helinski (University of California, San Diego), who also discussed the implications of ribonuclease-sensitive supercoiled plasmid DNA with respect to the role of RNA as a primer in plasmid

DNA replication. The general property of incompatibility between various groups of plasmids was considered by W. Maas (New York University). This was followed by a discussion of the relation between cellular replication sites and incompatibility involving several of the participants. The role of replication of *Col* factor DNA in the expression of colicin production was considered in part by K. Mizobuchi (National Institute of Radiological Diseases, Japan) and P. Kahn (University of Minnesota).

Attention also was focused on the biochemical mechanisms responsible for the conjugal transfer of plasmid elements between cells. The mutational approach to this problem was reviewed by T. Miki (Kyushu University), while the effects of various inhibitors of this process utilizing normal and minicell recipients were explored by R. Curtiss (University of Alabama, Birmingham) and S. Hiraga (Kyoto University). D. Rupp (Yale University) presented data on the replication events accompanying plasmid DNA transfer and the effect of chromosomal DNA replication mutations on the transfer process. Recent advances in our understanding of the structure of the F pilus, a cellular appendage determined by the F-type sex factors, were reviewed by M. Tomoeda (Kanazawa University) and C. Brinton (University of Pittsburgh), and a detailed model for the role of the sex pilus in the conjugal transfer of DNA was presented by Brinton.

Finally, the incidence of plasmid elements that determine antibiotic resistance and enterotoxin production in a variety of bacterial genera and species was reviewed by S. Falkow (University of Washington), and the distribution of *R* plasmid elements in *S. aureus* in particular was discussed by S. Mitsuhashi (Gunma University). The restructuring of plasmid elements through the process of recombination between different plasmids was explored by T. Arai (Keio University), an associate of T. Watanabe, and the role of recombination in the evolutionary process of plasmid formation was discussed by S. Mitsuhashi and other participants of the conference.

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## NEWS AND COMMENT

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## RECENT DEATHS

**Donald H. Andrews**, 74; professor emeritus of chemistry, Johns Hopkins University; 3 June.

**Frank L. Ashmore**, 47; former vice president, Duke University; 28 May.

**Ulrich Clever**, 43; professor of biology, Purdue University; 16 June.

**Blanche H. Dow**, 80; president emerita, Cottey College, and former president, American Association of University Women; 24 May.

**Gerardian J. Downing**, 78; former professor of physics, La Salle College; 11 May.

**Harry W. Faust**, 66; retired assistant director, organic division, Monsanto Industrial Chemical Company; 17 March.

**Abel A. Hanson**, 69; professor emeritus of higher education, Teachers College, Columbia University; 4 June.

**Gordon D. Hoople**, 78; professor emeritus of otolaryngology, Syracuse University; 4 June.

**Harry P. Kauffman**, 73; professor emeritus of poultry science extension, Pennsylvania State University; 28 May.

**W. V. Lambert**, 75; former dean, College of Agriculture, University of Nebraska; 31 May.

**Fletcher Low**, 80; professor emeritus of chemistry, Dartmouth College; 6 June.

**Franze E. Lund**, 63; former president, Kenyon College; 29 May.

**David W. Minar**, 48; professor of political science and urban affairs, University of Washington; 21 May.

**H. Vernon Price**, 63; professor of education and mathematics, University of Iowa; 4 June.

**James J. Ryan**, 69; former professor of mechanical engineering, University of Minnesota; 31 May.

**George E. Schlessner**, 68; chairman, education department, Colgate University; 14 May.

**Donald B. Shutt**, 80; bacteriologist and retired lecturer in dairy microbiology, Ontario Agricultural College, Canada; 5 June.

**Martin E. Straumanis**, 74; professor emeritus of metallurgical engineering, University of Missouri-Rolla; 16 March.

*Erratum.* In the article "APA: Psychiatrists reluctant to analyze themselves" (*Science*, 20 July, p. 246) the medical director of the APA, Walter Barton, was erroneously named as William Barton.