LETTERS

EDITORIAL
The Recombinant DNA Debate: M. F. Singer

ARTICLES
The Need for a New Medical Model: A Challenge for Biomedicine: G. L. Engel
Second Phases in Steel: W. R. Bandi

NEWS AND COMMENT
NSF: Pressures Mount to Provide Grants for Industrial Researchers
Mathematician Paul Erdős: Total Devotion to the Subject
Science in Europe/Benn and British Rethink Energy Policy
Science and Technology at State: Recognizing the Problem

RESEARCH NEWS
Persistent Infections: The Role of Viruses

BOOK REVIEWS
Jupiter, reviewed by J. W. Warwick; Patterns of Human Variation, M. H. Crawford; Science and Civilisation in China, P. M. Rattansi; Discrete Multivariate Analysis, J. Olkin; The Ethology of Predation, T. W. Schoener; Books Received and Book Order Service

REPORTS
Recombinant DNA: Examples of Present-Day Research: J. Abelson
Charon Phages: Safer Derivatives of Bacteriophage Lambda for DNA Cloning: F. R. Blattner et al.
Recombinational Switch for Gene Expression: J. Zieg et al.
EK2 Derivatives of Bacteriophage Lambda Useful in the Cloning of DNA from Higher Organisms: The AgtWES System: P. Leder, D. Tiemeier, L. Enquist
Chemical Synthesis of Restriction Enzyme Recognition Sites Useful for Cloning: R. H. Scheller et al.
Screening Agt Recombinant Clones by Hybridization to Single Plaques in situ: W. D. Benton and R. W. Davis
Use of Phage Immunity in Molecular Cloning Experiments: K. Backman, D. Hawley, M. J. Ross .............................................. 182

Hybridization in situ of SV40 Plaques: Detection of Recombinant SV40 Virus Carrying Specific Sequences of Nonviral DNA: L. P. Villarreal and P. Berg ........................................ 183

Increase in Conjugal Transmission Frequency of Nonconjugative Plasmids: N. J. Crisono and A. J. Clark ........................................ 186

Five Hundredfold Overproduction of DNA Ligase After Induction of a Hybrid Lambda Lysogen Constructed in vitro: S. M. Panasenko et al. ........................................ 188

Interspersion of Short Repetitive Sequences Studied in Cloned Sea Urchin DNA Fragments: A. S. Lee, R. J. Britten, E. H. Davidson ........................................ 189

Nucleotide Sequences from a Rabbit Alpha Globin Gene Inserted in a Chimeric Plasmid: A. Y. Liu et al. ........................................ 192

Analysis of Chicken Ribosomal RNA Genes and Construction of Lambda Hybrids Containing Gene Fragments: W. McClements and A. M. Skalka ........................................ 195

Clones of Individual Repetitive Sequences from Sea Urchin DNA Constructed with Synthetic Eco RI Sites: R. H. Scheller et al. ........................................ 197


Cloned Ribosomal RNA Genes from Chloroplasts of Euglena gracilis: M. I. Lomax et al. ........................................ 202

Cloning of Yeast Transfer RNA Genes in Escherichia coli: J. S. Beckmann, P. F. Johnson, J. Abelson ........................................ 205

Excision and Recombination of Adenovirus DNA Fragments in Escherichia coli: M. Perricaudet et al. ........................................ 208

Cloning of Cauliflower Mosaic Virus (CLMV) DNA in Escherichia coli: W. W. Szeto et al. ........................................ 210

The Effects of Escherichia coli and Yeast DNA Insertions on the Growth of Lambda Bacteriophage: J. R. Cameron and R. W. Davis ........................................ 212

Use of Isolators in Recombinant DNA Research: P. Kourilsky ........................................ 215

Degradation of DNA by Nucleases in Intestinal Tract of Rats: L. Maturin, Sr., and R. Curtiss III ........................................ 216

Probability of Establishing Chimeric Plasmids in Natural Populations of Bacteria: B. R. Levin and F. M. Stewart ........................................ 218

Interbacterial Transfer of Escherichia coli–Drosophila melanogaster Recombinant Plasmids: D. H. Hamer ........................................ 220

PRODUCTS AND MATERIALS

Chemical Carcinogen Glove Box; Storage Cabinets for Flammables; Modulation Contrast System; Infrared Spectrophotometers; Ultrasonic Cup Horn; Measurement of Atmospheric Electricity; Bench-Top Chemostat; Organic Carbon Analyzer; Disposable Water Dispensers; Skeletal Vascular Casting; Back-Lighted Digitizers; Electronic Balances; Gas Chromatographs; Vertical Slab Polyacrylamide Gel Electrophoresis; Data Recording System; Literature ........................................ 222

COVER

Charon II vector phages (dark indigo plaques) can be distinguished on lac+ bacteria (lower left, yellow plate) from reconstituted vector phages with the lac fragment reversed (light blue plaques) and from the phages with foreign DNA (small colorless plaques). On lac+ bacteria (upper right, yellow plate) the reverse phages are also colorless. The brown plates verify safety features of the host bacteria. See page 161. [Frederick Blattner et al., University of Wisconsin.]