Biotechnology

Edited by Philip H. Abelson

EDITORIAL

New Biotechnology Companies ........................................ 609

ARTICLES

Biotechnology: An Overview: P. H. Abelson .................................. 611
Rabies Virus Glycoprotein Analogs: Biosynthesis in Escherichia coli: E. Yelverton et al. ................. 614
Secretion of Human Interferons by Yeast: R. A. Hitzeman et al. ................. 620
Multiple Point Mutations Affecting the Simian Virus 40 Enhancer: H. Weiher, M. König, P. Gruss ................. 626
Human Insulin from Recombinant DNA Technology: I. S. Johnson ................. 632
Monoclonal Antibodies for Diagnosis of Infectious Diseases in Humans: R. C. Nowinski et al. ................. 637
Immunotoxins: A New Approach to Cancer Therapy: E. S. Vitetta et al. ................. 644
Protein Sequence Analysis: Automated Microsequencing: M. W. Hunkapiller and L. E. Hood ................. 650
— Antibodies That React with Predetermined Sites on Proteins: J. G. Sutcliffe et al. ................. 660
Protein Engineering: K. M. Ulmer ........................................... 666
Prospects in Plant Genetic Engineering: K. A. Barton and W. J. Brill ............ 671
Isolation of Agronomically Useful Mutants from Plant Cell Cultures:
R. S. Chaleff .......................................................... 676
Genetic Transfer in Plants Through Interspecific Protoplast Fusion:
J. F. Shepard et al. .................................................... 683
Contributions of Conventional Plant Breeding to Food Production: N. E. Borlaug 689
Biotechnology of Forest Yield: P. Farnum, R. Timmis, J. L. Kulp ............ 694
Genetic Manipulation of Antibiotic-Producing Microorganisms:
J. N. Vournakis and R. P. Elander .................................... 703
New Applications of Microbial Products: A. L. Demain ................................ 709
Bacterial, Viral, and Fungal Insecticides: L. K. Miller, A. J. Lingg,
L. A. Bulla, Jr. ..................................................... 715
Immobilized Enzymes and Cells as Practical Catalysts: A. M. Klibanov ......... 722
Bioreactors: Design and Operation: C. L. Cooney .................................. 728
Production of Feedstock Chemicals: T. K. Ng et al. ................................ 733
Single-Cell Proteins: J. H. Litchfield ........................................ 740

REPUBLIC OF THE ADVANCEMENT OF SCIENCE

NEWS AND COMMENT
Reagan’s Budget Boosts Basic Research.................................................. 747
What Price Landsat? ................................................................. 752

COVER
Shoots of Douglas fir, *Pseudotsuga menziesii* (Mirb.) Franco, growing from subepidermal tissue of cotyledon rosettes in sterile culture. Shoots are being grown as part of a research project for cloning genetically improved trees. Subsequently, the shoots will be cut, elongated, rooted, acclimated to soil, and planted in the forest. Tissue culture may play an important part in bringing forest yields toward their theoretical maximum. See page 694. [Michael Wotton, Weyerhaeuser Company, Tacoma, Washington 98477]