

DEPARTMENT OF MICROBIOLOGY AND MOLECULAR GENETICS

HARVARD MEDICAL SCHOOL

25 SHATTUCK STREET

BOSTON, MASSACHUSETTS 02115

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CAMBRIDGE, MASS.

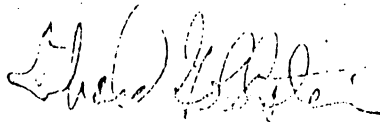
Councillors Barbara Ackermann and David Clem
Cambridge City Council
Cambridge City Hall
Cambridge Massachusetts 02139

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Sincerely,



Richard Goldstein
Assistant Professor

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HELEN WRIGHT

579 Forest Lake Drive,
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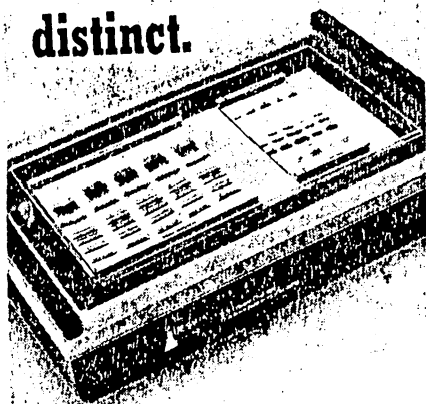
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LETTERS

A Bank of Mammalian DNA Fragments

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Since the complex large genomes of man and other mammals are now amenable to more detailed study as a consequence of advances in recombinant DNA technology, it is important that a safe, uniform, and reproducible method be developed for replicating and storing their fragments. It has been suggested to the National Institute of General Medical Sciences (NIGMS) by members of the scientific community that a repository or bank of mammalian DNA fragments might provide a useful means for achieving these objectives. A bank of DNA fragments, containing reference portions of the human and other mammalian genomes, could help keep order in this rapidly growing field and provide an invaluable national resource for investigators. Use of this bank to replicate the reference material for distribution in a safe form would foster full utilization of this new technology while maintaining compliance with the guidelines, and minimizing risk.

The NIGMS is therefore specifically interested in receiving comments on the desirability of establishing a repository of mammalian DNA fragments. Suggestions as to its operation and maintenance will also be welcome. For example, such a repository might solicit and accept defined fragments of DNA in an appropriate form. It is conceivable that the bank might also produce DNA fragments *de novo*, if this proved desirable. These fragments would then be stored, replicated, characterized, and distributed with strict attention to safety.

Although interested in the possibility of establishing a repository for mammalian DNA fragments, the NIGMS has come to no conclusion as to its advisability. A decision to proceed will, in part, be

based on an evaluation of responses to this letter.

Comments should be sent to the undersigned within 6 weeks of the date of publication of this letter.

FRED H. BERGMANN

Genetics Program, National Institute of General Medical Sciences, Bethesda, Maryland 20014

Utility Accounting and Energy Policy

Luther J. Carter, in his article "Nuclear initiatives: Two sides disagree on meaning of defeat" (News and Comment, 19 Nov., p. 811), discusses the Missouri utility rate reform referendum and says, "This initiative, which was approved by a 62 percent majority, makes it impossible for the Union Electric Company to bill ratepayers for the interest it owes on construction work in progress."

Since the construction work in progress (CWIP) issue is an important one for both energy policy and utility financing, it would be worth getting straight the concept and the terminology.

The Missouri electorate voted to exclude CWIP from the rate base. What does this mean? In many jurisdictions, CWIP is excluded from the rate base, the rationale being that a plant not completed is not serving the public, and therefore the public should not pay a return on it. This is the "used and useful" concept. The utility, though, is incurring costs to support the construction work (that is, interest on borrowed funds, dividends on preferred stock, and return on common stock sold to finance the work). These costs are capitalized, which means that they are added to the final cost of the power plant. If, for instance, the utility had to invest \$100 in a construction project for a year, and the cost of that money was 9 percent, the project would go on the books at \$109. The utility would earn a return on \$109 and also recover its investment through depreciation on \$109, not \$100. The extra \$9 is referred to as the allowance for funds used during construction. It is a noncash credit that appears in the income statement.

In other jurisdictions, such as Missouri until the referendum, some or all of CWIP is placed in the rate base and customers must pay higher rates to provide that extra \$9 cost during the construction period. The choice is between making the customer pay over the life of the plant or while the plant is being built. There is no way of escaping payment.

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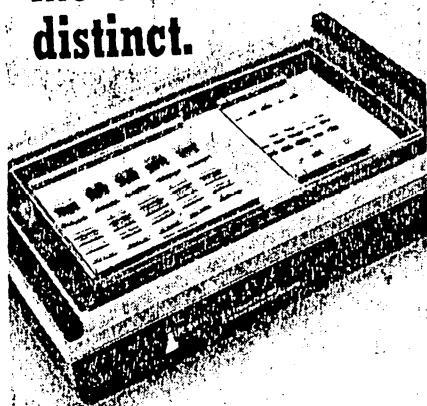
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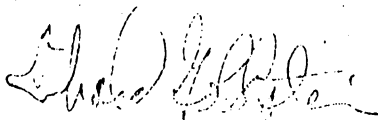
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Mintz *et al.* and Brinster dissected embryoid bodies into their core cells and their rind of differentiated endothelial cells. The core cells are the germ cells that give rise to all differentiated types. By mating C57 white mice, they obtained blastocysts, into which they injected clumps of core cells from teratomas from black mice of strain 129. The hybrid em-

bryos were then reimplanted in the uterus of foster mothers (also white); and the pregnancies were permitted to go to term. Normal mice were born that were mosaic in coat color. Furthermore, the male mice born of these constructed hybrid embryos were fertile, that is, they made normal sperm and produced some F₁ black mice when mated to female hybrids. Since the mice were normal in every way, we must conclude that these descendants of tumor cells were normalized by the environment of the normal mouse embryo.

Beautiful as these results are, their potential importance lies in the possibility of combining them with the sort of studies that fill the rest of the book, those on the culture *in vitro* of the differentiated descendants of teratomas. If the implantation results are confirmed and other studies are carried out with cultured teratoma cells, one would expect future implantations to be carried out with cultured diploid cells that have received DNA sequences obtained by cloning in prokaryotic organisms. That would, it seems to me, be the technology for carrying a known DNA sequence directly through a prokaryote vector for amplification, then through a mammalian cultured cell for integration into the mammalian genome, and then through blastocyst injection and reimplantation of an embryo for stabilization in a whole mammalian organism. Although this bypass of evolution has not yet been accomplished, the book provides an experimental context for carrying out such work. I suspect that this context will become increasingly important to all biologists.

ROBERT POLLACK

Department of Microbiology,
Health Sciences Center,
State University of New York,
Stony Brook

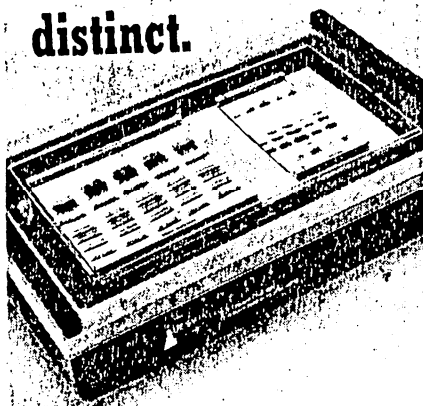
Statistical Induction

Perspectives in Probability and Statistics. Papers in Honour of M. S. Bartlett on the Occasion of His Sixty-Fifth Birthday. J. GANI, Ed. Applied Probability Trust, Sheffield, England, 1976 (U.S. distributor, Academic Press, New York). viii, 424 pp. \$21.

The first half of this century witnessed the major developments in the theory and methods of statistical induction. The pioneering contributions made in England by Karl Pearson, Ronald Fisher, Jerzy Neyman, and Egon Pearson are widely recognized and revered. One

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LETTERS

A Bank of Mammalian DNA Fragments

On 16 June 1976, the National Institutes of Health published guidelines for recombinant DNA research. The guidelines were adopted after much discussion and debate within both the scientific and the lay communities. They are intended to facilitate the pursuit of research while at the same time minimizing the risk to the public. Certain types of experiments, particularly those involving the creation of DNA chimeras between bacterial and mammalian genes, can only be performed under the most restrictive conditions. Despite these concerns, there are likely to be very significant uses of such materials for biomedical research and diagnostic purposes.

Since the complex large genomes of man and other mammals are now amenable to more detailed study as a consequence of advances in recombinant DNA technology, it is important that a safe, uniform, and reproducible method be developed for replicating and storing their fragments. It has been suggested to the National Institute of General Medical Sciences (NIGMS) by members of the scientific community that a repository or bank of mammalian DNA fragments might provide a useful means for achieving these objectives. A bank of DNA fragments, containing reference portions of the human and other mammalian genomes, could help keep order in this rapidly growing field and provide an invaluable national resource for investigators. Use of this bank to replicate the reference material for distribution in a safe form would foster full utilization of this new technology while maintaining compliance with the guidelines, and minimizing risk.

The NIGMS is therefore specifically interested in receiving comments on the desirability of establishing a repository of mammalian DNA fragments. Suggestions as to its operation and maintenance will also be welcome. For example, such a repository might solicit and accept defined fragments of DNA in an appropriate form. It is conceivable that the bank might also produce DNA fragments de novo, if this proved desirable. These fragments would then be stored, replicated, characterized, and distributed with strict attention to safety.

Although interested in the possibility of establishing a repository for mammalian DNA fragments, the NIGMS has come to no conclusion as to its advisability. A decision to proceed will, in part, be

based on an evaluation of responses to this letter.

Comments should be sent to the undersigned within 6 weeks of the date of publication of this letter.

FRED H. BERGMANN
Genetics Program, National Institute of General Medical Sciences, Bethesda, Maryland 20014

Utility Accounting and Energy Policy

Luther J. Carter, in his article "Nuclear initiatives: Two sides disagree on meaning of defeat" (News and Comment, 19 Nov., p. 811), discusses the Missouri utility rate reform referendum and says, "This initiative, which was approved by a 62 percent majority, makes it impossible for the Union Electric Company to bill ratepayers for the interest it owes on construction work in progress."

Since the construction work in progress (CWIP) issue is an important one for both energy policy and utility financing, it would be worth getting straight the concept and the terminology.

The Missouri electorate voted to exclude CWIP from the rate base. What does this mean? In many jurisdictions, CWIP is excluded from the rate base, the rationale being that a plant not completed is not serving the public, and therefore the public should not pay a return on it. This is the "used and useful" concept. The utility, though, is incurring costs to support the construction work (that is, interest on borrowed funds, dividends on preferred stock, and return on common stock sold to finance the work). These costs are capitalized, which means that they are added to the final cost of the power plant. If, for instance, the utility had to invest \$100 in a construction project for a year, and the cost of that money was 9 percent, the project would go on the books at \$109. The utility would earn a return on \$109 and also recover its investment through depreciation on \$109, not \$100. The extra \$9 is referred to as the allowance for funds used during construction. It is a noncash credit that appears in the income statement.

In other jurisdictions, such as Missouri until the referendum, some or all of CWIP is placed in the rate base and customers must pay higher rates to provide that extra \$9 cost during the construction period. The choice is between making the customer pay over the life of the plant or while the plant is being built. There is no way of escaping payment.

S-60A

Comm. from Richard Goldstein re: DNA
Research