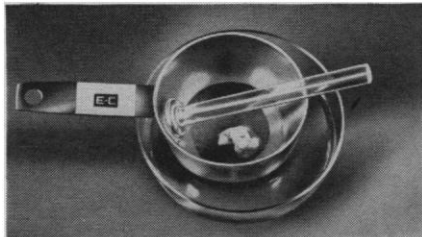


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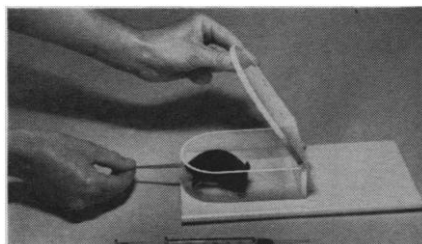
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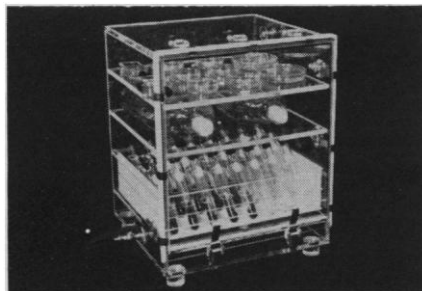
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to survive at least 6 years (4). Mice, being short-lived, should have cells with less than the human doubling capacity of 50. However, labeling studies of mouse tongue epithelium showed a minimum of 146 and an average of around 565 doublings over the life-span, with no significant difference in cell division between 3-, 13-, and 19-month-old animals (5). In tissues showing decreased cell proliferation with age, there is no dying out or loss of cells (5). Martin, Sprague, and Epstein cultured human cells, and although their report is frequently cited as supporting the Hayflick model, inspection of the data indicates there is no significant difference in doubling capacity of cells obtained from donors 20 to 90 years of age (6).

Available evidence overwhelmingly supports the view that in mammals there is no generalized age-associated loss of stem cell ability to divide, followed by the dying out of these cells. Reported alterations in numbers of proliferating cells with age could result from comparing growing animals with older ones, from changes in cellular environment, or from changes elsewhere in the body, particularly in stimuli to growth or cell turnover, and not represent intrinsic capacity for cell division. Before committing resources and effort to the study of a model, it should be ascertained that the model bears some relationship to the phenomenon in question.

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Cost of Fuel

Before the energy crisis hit last year, the University of Massachusetts was paying \$4 per barrel of oil and \$16 per ton of coal. Our latest costs are \$13 per barrel of oil and \$70 per ton of coal. Thus the cost of coal has increased by a factor of 5.4 while the cost of oil

has increased by a factor of 3.25. At current prices, coal costs \$2.60 per million Btu's (British thermal units), while oil costs \$2.06 per million Btu's. It does not appear that the increase in the cost of coal could possibly result from increased labor prices or from a concern that our coal supplies—which are much more extensive than all of the oil in the Middle East—could be depleted, but rather from companies making great profits from the crisis that is facing our nation. We are essentially unable to influence the price of imported oil, but we could place controls on the price of domestically produced coal. In my opinion this should be an immediate goal of our federal energy policy.

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Peer Review: Distribution of Reviewers

The peer review system of evaluating grant applications has been criticized by both scientists and nonscientists. Much of the criticism, especially from within the scientific community, has been based on the fear that the system is operated by a self-perpetuating oligarchy. Few facts about the actual operation of the system have been available. The Public Policy Committee, Division of Biological Chemistry of the American Chemical Society, has examined the composition of 11 National Institutes of Health (NIH) review groups from 1964 to 1973 by listing the names and institutions of the members as published in the 1964, 1968, 1972, and 1973 editions of *NIH Public Advisory Groups*. Since members serve 4-year terms, this list should include essentially all those who served during this period. Because of the interests of our division, we chose those study sections most likely to review basic research grant applications in biochemistry. The sections we considered were: Allergy and Immunology, Arthritis and Metabolic Diseases (Program Project Committee), Biochemistry, Biophysics and Biophysical Chemistry (A and B), Endocrinology, Medicinal Chemistry (A and B), Microbial Chemistry, Molecular Biology, and Physiological Chemistry.