sibility of cytoplasmic "holding" functions to carry a species through until a "chance" mutation arises, for example, does not appear to be experimentally discounted. (The day after I drafted this letter the report by J. Brun on "Genetic adaptation . . ." appeared in *Science* [10 Dec., p. 1467]. Whatever the conclusion of parapsychologists, the scientific results are encouraging!) Or, given the importance of mutation, can it definitely be said that environmental circumstances, for example stress, will not alter the rate of "random" change? The point to be made is that such inferences do not necessarily follow from the data at hand, and similar careless generalizations with their hidden assumptions may but replace one dogma with another. . . . The difficulty of evaluating scientific proposals comes in trying to balance the apparent probability of success with the conceptual importance of success if it does occur. To rate only the former is, and I think Glass would agree, "bad." Here indeed ethics and pragmatics merge.

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Von Neumann: Help Sought with Film

On the morning of Monday, 29 December 1952, John von Neumann gave a lecture on game theory at a meeting in St. Louis of the AAAS. The American Mathematical Society was also meeting there, and his talk had auditors from both meetings. Someone in the audience, identity unknown, tape-recorded this talk. Can someone help us locate the tape?

The Committee on Educational Media of the Mathematical Association of America is preparing a film on von Neumann's life and achievements. We are trying to track down this and other recordings and gather pictures and information about him. Photographs are especially wanted; all such will be carefully handled and returned to the sender. If you can help us, please write or call (collect) Miss Patricia Powell, 344 West 12 Street, New York 10014 (212-243-5318), or me at the address below (415-362-7582).

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Beam Storage in the Cambridge Electron Accelerator

High-energy beams of electrons have been stored with d-c magnetic fields in the alternating-gradient (AG) synchrotron at the Cambridge Electron Accelerator. Circulating currents of several milliamperes were obtained at energies of 500 and 750 Mev. The lifetime of the stored beam at 500 Mev was 8 seconds, 1000 times longer than the normal accelerating time. Analysis shows that the lifetime is limited by the radial blow-up due to radiation antidamping.

This result was obtained by turning off the a-c power to the ring of magnets (time constant of 0.5 second) and allowing the last injected pulse of electrons to be accelerated and decelerated (at 60 cy/sec) until the magnetic field stabilized at half the peak value. Adiabatic damping due to the rising value of the minimum field reduces amplitudes during the change in magnet excitation. The radio frequency is operated in a continuous-wave mode to maintain phase stability. In the AG magnet system of the CEA, the growth of radial betatron amplitudes due to synchrotron radiation, with a time constant of 3.5 seconds at 500 Mev, eventually destroys the stored beam. Installation of a "damping" magnet is planned to provide damping in the radial mode, and to allow storage up to 4-Gev energy. Beam lifetime should then be limited only by gas scattering and bremsstrahlung losses.

This experiment is one step in a development program to produce and store counter-rotating beams of electrons and positrons in the CEA to provide a colliding beam capability.

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The Landscape: Economic Abandonment

Abelson's editorial on conservation and natural beauty (17 Dec., p. 1539) stirs me to make a few comments. For the past decade and a half I have lived in the southern Rocky Mountain province (more particularly the "Hispanic" southwestern portion of it). This is predominantly a region of wildlands, ranging from Upper Sonoran semidesert to Alpine montanas of great scenic beauty and cultural interest. A good deal of my work has been in the sphere of regional planning and rural economic development. I would like to suggest that the overwhelming need and challenge in areas such as this is not so much for bureaucratically managed conservation programs and quarantined wilderness areas, as for the redevelopment of genuine "agrestal" economic communities, permanently based in wildlands and forest areas and making their living from the skillful management and utilization of the lands, waters, and other resources of these areas. Most of the deteriorating landscape in regions such as this is not the choice scenic and climax forest areas lying in national parks, but the vast expanses of open lands of mixed classification and mixed ownership which are dropping out of economic use and degenerating into a sort of feral zone of cut-over woodlands, abandoned fields and small farms, decaying settlements, and the like.

The underlying dynamic of this decline is, of course, the capital-conserving and capital-concentrating tendencies of our society, which are progressively raising the minimum size for productive units competitive on the national market. The logic of this process, unanswerable in terms of orthodox economic analysis, is nevertheless highly destructive of the ecology of large sectors of the North American landscape.

How to reverse this process and reintroduce skillful and effective human care and occupancy in such landscapes seems to me a problem of the utmost importance for the coming generation. Success in this effort obviously bears very strongly on the complementary problem of excessive and unbalanced urbanization which is plaguing our great cities. The present formula for custodial management of open lands by various federal agencies seems to offer little promise in this direction. It is an unfortunate fact that the policies of most such agencies, being of necessity shaped by the same labor-saving and capital-conserving logic which dominates private industry, usually hasten the very processes of economic abandonment which they are supposed to combat. (They also foster the overuse of specialized areas in the national parks and forests, resulting in the "summer slums" which the editorial commented on.) The cumulative result of such policies and trends is that increasingly large sectors of North Amer-

ica wildlands are less used, less cared for, and less able to contribute to the practical and spiritual needs of people than they were a generation ago—this despite the enormous publicity that is being given to the outdoor recreation "industry" and the statistics of "visitor trips."

To sum up, I suggest that the formal "conservation movement" must give way to a far broader approach to the reestablishment of functioning, ecologically balanced human communities within the landscape.

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. . . I should like to call attention to a unique approach to conservation problems which originated in Massachusetts. In 1957 the Commonwealth authorized the establishment of municipal conservation commissions. The members of the commissions, appointed by selectmen or mayors, are concerned citizens who serve without pay to protect and develop the natural resources of their own communities. Conservation commissions have proved to be one of the most effective ways to combat conservation problems at the local level. Since its beginning in Massachusetts, the conservation-commission movement has spread into Connecticut, New Hampshire, and Rhode Island.

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Abelson suggests that we "give over much of the areas of our parks to wilderness, letting nature take its course, while observing closely what is happening [and] and at the same time . . . devote limited areas to controlled experimentation." Such projects might readily fire the imagination of many scientists. A joint field team in the earth and biological sciences might possibly be given a grant for an area 10 miles on a side. The chosen site might then be evacuated, if necessary, and isolated (much like the "reserves" in Huxley's *Brave New World*). If a restricted part, let us say a tenth, of this area were available for experimentation and the remainder were not entered but observed by long-range techniques, a tremendous study potential would be created.

Such a project would be a long-term proposition requiring the time of many scientists and with cumulative expenses possibly comparable to those of the 200-Gev machine for high-energy physics. The problems of site selection and assignment of research facilities might also be as complex as those that have arisen with that machine (see News and Comment, 17 Dec., p. 1566). Unfortunately, the idea does not have a major government agency like the AEC behind it. Thus we may have to depend on the proliferation of inadequate projects to meet the need, unless on some common meeting ground—perhaps the AAAS—the applicable sciences can draw up a bolder scheme to make such a study on earth as feasible and productive as our efforts to strike out into the heavens.

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Prohyphen

If Morris Leider ("Antiunion," 10 Dec., p. 1408) wants to found a Society for the Preservation of the Hyphen, I will promise to become a charter member. . . . If to accomplish clarity in scientific writing we must flout convention, I say flout it! What is to happen to "un-ionized" without its protective hyphen? I have nothing against an unhyphenated "subconscious," but when it comes to "sübunit," *my* subconscious refuses to disassociate the word from buns. . . .

May I also put in a good word for the diaeresis? If our microbial friends are not to be allowed to be micro-organisms, may they not at least be microörganisms, to spare them from becoming mic·roor′ganisms? Unlike the hyphen, this at least requires no extra space.

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New Russian Journal in Genetics

The first issue, dated July 1965, of a new journal called *Genetika* (not to be confused with the Dutch journal of the same name) recently reached me from the U.S.S.R., having been sent me by one of the two assistant editors who is well known to me both personally