Letters

Mars and the Evolution of Life

There is considerable feeling among some biologists (and others, as well), as expressed in Wilber's letter (9 July, p. 135), against the large expenditures being made for a quest for life on Mars—sums which might otherwise be allocated to terrestrial research projects.

As a biological scientist without vested interest in the space program, I should like to say something in defense of this quest. While no reasonable scientist can dispute the abundance of challenging problems still awaiting solution on this planet, the intellectual significance of discovering the independent origin of life at a second location in the universe is immeasurable. It would with one stroke eliminate almost all doubt that life is a common rather than unique phenomenon in the cosmos. Without even alluding to the practical benefits which might accrue from such a finding, it would surely represent one of the (if not *the*) most monumental developments in the history of mankind.

While Mars now appears an unlikely culture medium for the origin of life, conditions at its surface were not always what they are today. From what we know of planetary atmospheres, there is every reason to believe that the atmosphere of Mars was at one time more abundant and probably reducing, suitable for the synthesis of organic compounds as in the experiments of Miller and Urey. Mars is much less massive than the earth and consequently may have evolved to its present condition more rapidly. However, through the process of natural selection, life which arose in much more hospitable circumstances may well have evolved to forms which can survive and reproduce even in the rigorous climate there today. Indeed, some terrestrial organisms have been shown to be capable of both survival and modest replication in simulated Martian environments as we best understand them.

It is my conviction, therefore, that the possible return from this project is well worth the chips which have been thrown into the pot.

JOEL W. GOODMAN
Department of Microbiology,
University of California,
San Francisco Medical Center,
San Francisco

Worms Today, Scientists Tomorrow

I read in the annual report of the National Institute of Mental Health where some behaviorist fellows have trained flatworms and then cut them up and fed them to untrained flatworms who acquired some of the learning through ingestion.

For their own protection scientists must organize and bring this kind of research to a halt. Just imagine the restaurants of the future with signs in the window reading "We serve only the most learned scientists" or "With our Blue Plate luncheon we issue a doctor's degree in three different disciplines."

I would like to make it a matter of public record that I ain't no scholar, I ain't no scientist, and I ain't never learnt nothin' no time no how.

ROBERT E. GARRIGAN
640 Bruce Avenue, Flossmoor, Illinois

The Research Parasite

While I agree with the general philosophy of H. W. Davenport's letter on the research parasite in the university (21 May, p. 1040), I think he has described only half of the syndrome and has incorrectly identified the pathogen. Davenport suggests that it is "a new generation of faculty members, nursed on NIH-NSF support, which regards its own research productivity as its only valid contribution to society." On the basis of my own experience, 5 years on the faculty of a physiology (and biopolitics) department in a midwestern university only a few hundred miles from his institution, I draw a different conclusion.

I believe that there is a positive, not a negative, correlation between teaching and research; the two activities assist each other—and teaching at a graduate level is (or should be) largely an introduction to research. Furthermore, more often than not the good researcher is a stimulating teacher. The difficulty is that the drive by university administrations for prestige has occurred at the same time as the exponential growth of many fields; few individuals can really evaluate their colleagues' research. If the value of Gibbs's and Mendel's publications was largely missed by their contemporaries a century ago, what now with the "information explosion"? Rather than quality, university administrators have turned to quantity—the number of papers published per year, the size of research grants, and so forth. Thus *apparent* research activity has become the principal aim.

The result is that within a university department there may be created an inner circle of "operators" and opportunists, many of whom will not be scholars, who determine general policy and philosophy. The resulting decrease in quality of teaching has been emphasized lately; less frequently mentioned but equally objectionable is the tendency of such "operators" to use graduate students and younger faculty members. The result is that the independent student, who is usually the most capable, is selected against more strongly than the incompetent student; the need for teaching assistants and research assistants (somebody has to do the work) is such that the Ph.D. is awarded for "services rendered." Both student and staff learn their lesson well—teaching (and scholarship) does not pay.

It is not the "new generation of faculty members" who are responsible for this state of affairs. Even if the young staff member wishes to become "Operator, Jr. Grade," the "new generation" does not have the necessary access to the university corridors of power. Nor is the nursing on NIH–NSF support, to paraphrase Davenport, responsible. Some of the problems are intrinsic to the general organization and basic philosophy of the megauniversity and antedate the creation of the various granting agencies.