[measles] virus." On the other hand, we are not aware of any evidence that establishes any a priori abnormalities of patients with SSPE. The studies of Byington and Johnson (*6*) on weanling hamsters may suggest that immune failure does play a part in the pathogenesis of this disease, but the other animal experiments indicate that development of subacute encephalitis occurs in perfectly normal hosts. It is of interest that these normal animals which do develop encephalitis fail to generate humoral antibodies against the SSPE viruses, whereas control animals challenged identically with measles virus and free of subsequent encephalitis do develop antibodies against the infective agent. This would tend to suggest again that it is the agent rather than the host that bears a major responsibility for induction to the disease.

We do not wish to claim that we have an explanation for SSPE, but only to point out that it has not yet been found.

MICHAEL KATZ
School of Public Health, Columbia University, New York 10032
VOLKER TER MEULEN
Institut für Virologie, Universität Würzburg, 8700 Würzburg, Germany

References

1. V. ter Meulen, M. Katz, D. Müller, *Curr. Top. Microbiol. Immunol.* **57**, 1 (1972).
2. V. ter Meulen, M. Katz, Y. M. Käckell, G. Barbanti-Brodano, H. Koprowski, E. Lennette, *J. Infec. Dis.* **126**, 11 (1972).
3. V. ter Meulen, L. L. Leonard, E. H. Lenette, M. Katz, H. Koprowski. *Proc. Soc. Exp. Biol. Med.* **140**, 1111 (1972).
4. S. Oyanagi, V. ter Meulen, M. Katz, H. Koprowski, *J. Virol.* **7**, 176 (1971).
5. M. Katz, L. B. Rorke, W. S. Masland, G. Barbanti-Brodano, H. Koprowski, *J. Infec. Dis.* **121**, 188 (1970); J. R. Lehrich, M. Katz, L. B. Rorke, G. Barbanti-Brodano, H. Koprowski, *Arch. Neurol. Chicago* **23**, 97 (1970); P. Thein. A. Mayr, V. ter Meulen, H. Koprowski, Y. M. Käckell, D. Müller, R. Meyermann, *ibid.* **27**, 540 (1972); M. Katz, Y. Käckell, D. Müller, V. ter Meulen, H. Koprowski, *Acta Neuropathol.* **25**, 81 (1973); H. Thormar, G. Jervis, S. C. Karl, H. R. Brown, *J. Infec. Dis.* **127**, 678 (1973).
6. D. P. Byington and K. P. Johnson, *J. Infec. Dis.* **126**, 18 (1972).

Charles Whittlesey

The editorial on government forest policy by Henry Clepper (24 Aug., p. 703) is appreciated by the historically minded and is appropriate and well done, but unfortunately contains two errors. Charles Whittlesey (misspelled Whittlesly in the editorial) is listed as a horticulturist. He was primarily a geologist (for whom Glacial Lake Whittlesey was named) and second an archeologist (for whom the Whittlesey Culture was named). Later, he became a prolific historian, writing, among other things, the *Early History of Cleveland, Ohio* (*1*). His work in horticulture was minor and scarcely worth mentioning.

RALPH W. DEXTER
Department of Biological Sciences, Kent State University, Kent, Ohio 44242

References

1. C. Whittlesey, *Early History of Cleveland, Ohio* (Fairbanks, Benedict, Cleveland, 1867).

Irrationalism

Charles Frankel's use of the term "irrationalism" in his article "The nature and sources of irrationalism" (1 June, p. 927) to characterize the assertions of certain eminently rational persons such as R. D. Laing and T. Roszak inveighs against a group which develops its views well within the bounds of traditional rationalism. For instance, Laing, in stating that there is no such "condition" as "schizophrenia" and that the label is "a social fact and the social fact a political event," is indicating that in his opinion the concept of schizophrenia as a form of illness is not justified by logic and experience and yet continues to determine our reactions to a certain class of behavior with consequent effects which are not necessarily beneficial to those involved. And certainly, Roszak's criticism of Freud on the basis of the doubtful possibility of being able to specify where the "intrapsychic" gives way to the "external world" utilizes rationalism in its best sense to specify a very basic problem in the justification of Freudian psychology. What Laing, Roszak, and others like them oppose is the narrow and uncritical application of certain modes of science and reason to the human state that fail to be adequate to their proclaimed purpose, in spite of their effectiveness in the nonhuman world. They further argue, still in the rational mode, that these inappropriate applications distort relationship in a way which significantly detracts from human experience.

As a psychiatrist, I share the doubts of these men and believe that the development of modes of science and rationality which will be adequately appropriate to human function is a task of the future. In the meantime, let us differentiate between those who, by virtue of their very real experience in dealing with human problems, are critical of certain ways of applying rationality to human events and those (perhaps correctly called "irrationalists") who reject all rationality as though it were an invention of the devil. Even this latter possibility should not be totally rejected by one who considers himself fully rational. After all, the allegory of the Garden of Eden is not simply nonsense.

ALFRED S. ROBERTS, JR.
Pennsylvania Hospital, 330 South Ninth Street, Philadelphia 19107

To discover "the nature and sources of irrationalism" is a difficult task for anyone. Unfortunately, for one who is steeped in rationalist tradition, it becomes almost impossible. To be an irrationalist is not to deny science, but to see it as knowledge and to let this knowledge grow into wisdom. Science would tell us that a work of art is a collection of canvas and paint. Wisdom would reveal its beauty.

Frankel states that "Thanks to science, the present world makes available . . . the story of evolution." If we look back in time, I believe that Darwin was considered irrational by his contemporaries. The use of Copernicus as an example of a scientist (rationalist) is also tenuous, as Copernicus considered himself an astrologer first and an astronomer second.

I think the lesson we can learn from Frankel's article is not that reality and appearance are separate, but that the mind can often see those things which the eyes cannot.

BRUCE WANDS
Information Services, Sandoz Pharmaceuticals, East Hanover, New Jersey 07936

The thoughtful essay by Frankel clearly defines many of the significant characteristics of rationalism but fails to provide a practical answer to those who today are searching for answers to the problems of everyday life. Rational analysis can solve problems once a problem reaches a level of awareness, but most of life proceeds at an experiential level for which the term rational is meaningless. One must not make the mistake of calling "rational" all activities which can be subject to rational analysis. For example, the act of walking can be analyzed in terms of highly sophisticated biomechanical and neuroanatomical concepts, and physicians do so for patients with impaired gait; for the healthy infant, child, or adult, how-

ever, walking is learned and skillfully executed daily without any application of rational techniques. The tasks of personal and social functioning are so complex and involve so many variables that no one could live "rationally," however rational their behavior may be if analyzed. Were rationalism to be a way of life rather than an occasional tool of planning and problem-solving, life would be impossible. The experiences of love, friendship, religion, sexuality, and artistic pleasure cannot often be rationally analyzed while the event is occurring, although philosophers and scientists properly attempt to structure and understand these experiences in retrospect. To insist that such experiences be subjected to rational scrutiny and be guided by rational principles by all those who participate on an existential level is, in my judgment, an inappropriate application of rationalism. The many responsible persons of all ages who today reject rationalism perceive its limitations and would rather live and "be involved" at a level where the concept of rationality is simply the wrong frame of reference.

It may also be that those who reject rationalism as a life philosophy are aware of its shortcomings and failures. Even in those areas where scientific method has had its greatest successes there have been numerous failures because of the misapplication of rational concepts. In the realm of the physical sciences, for example, it still happens that bridges collapse, airplanes crash, and nuclear reactors fail because the concept utilized in their design were faulty or incomplete.

In the softer sciences rationalism can hardly be considered a successful or perfected method. Consider the many faulty social theories—dogmatically asserted as "reasonable"—which have ruined the lives of generations before being abandoned, often in favor of other faulty theories. The fact that war, mental illness, poverty, and worldwide economic crises continue to plague modern man suggests that rational methods have been relatively impotent in many areas that matter most to the concerned youth of today. Those ardent advocates of rationalism might well reflect on the view of a homey philosopher who once said, "It ain't the things I don't know that cause me trouble, it's the things I do know that ain't so that are the problem."

I find little in Frankel's brilliant essay with which to disagree regarding the strengths of rationalism. I differ only in judging the extent to which rationalism can or should be applied to the experience of real life. Valuable as rational analysis is to science, it does not have the capability of being anything like a complete life philosophy. Most of life is experienced. Those experiences which are successful or painful may be corrected by rational methods, but this in no way diminishes those common nonrational experiences which are satisfying and successful, and which many seem to say are an adequate base for a meaningful life.

DANIEL LEVINSON
Department of Family and Community Medicine, Arizona Medical Center, University of Arizona, Tucson 85724

I am grateful to Roberts, Wands, and Levinson for being so gentle. As a veteran of past combat with defenders of irrationalism, I must say that I seem to be gaining.

Surely Laing and Roszak go through the forms of reasoning and do so seriously. Nothing in my article said or implied anything different. But surely, too, they mean to *advocate* irrationalism in some areas of thought and life. And it is possible that they do not successfully marshall evidence or put together logical arguments to support that conclusion. Roberts seems to confuse these three things.

As for Roberts' suggestion that "rationality" ought to be redefined, I await more specific illumination. However, his final remark to the effect that it is at least possible that *all* rationality is the work of the devil doesn't encourage me to hold my breath. Does he mean that it is seriously possible that there is no case to be made, ever, for looking before leaping?

Wands's reminder that rational men have been thought to be irrational is not an argument for irrationalism. I would take it as a further warning against glorifying the insights yielded by intuition or passion.

Levinson raises at once the most moderate and the most frequent objection to the "rationalism" I defended, and I agree that analysis, cerebration, and conscious detached observation are not 24-hour-a-day requirements. But I know of no defender of rational methods who proposes that we devote our lives exclusively to such activities. As Santayana says in another context, knowledge isn't eating (*1*). But this is hardly an argument against increasing our knowledge or refining our discriminations with regard to what we eat. I suspect there is little difference between Levinson's views and mine, but it makes me a bit uncomfortable to read Levinson's comments on the limits of rationalism as a "life philosophy," when all he is saying is that philosophy isn't everything, that we oughtn't to be thinking all the time, and that rational methods often fail to solve problems. Who holds these views under attack? And is the implication that, since rational methods often fail, the use of irrational methods is sometimes warranted? I don't think Levinson would draw such an implication, but that leaves me perplexed as to the significance of the point he is making.

CHARLES FRANKEL
Department of Philosophy, Columbia University, New York 10027

References

1. G. Santayana, *The Life of Reason*, vol. 1, *Reason in Common Sense* (Collier, New York, 1962).

Flora North America

It was surprising and disappointing to read of the termination of the *Flora North America* project (News and Comment, 23 Feb., p. 778).

From all available reports, the project seemed to be making important strides in the direction of a "third-generation" style of flora. The use of the computer in a central role for flora information-management was an important development that had a worldwide following. For major continent-wide projects, there is an urgent need to provide as best as possible for the local worker, who wants data for only a limited flora. It is these grassroots, local interests that will be a major help in the conservation, study, and use of plant resources in the future. A computer-based flora could give us all the local manuals we want, as subsets of the continent-wide project. These could be as up-to-date as we choose to make them. A host of other benefits could come to the biological sciences, in orderly, computer-organized packages.

It is sad indeed to see such an important project end because of lack of funds. Can *Flora North America* be brought to life again? A firm plea is made for this to be done.

A. V. HALL
Bolus Herbarium, University of Cape Town, Rondebosch, Cape Province, South Africa