be worth the price of institutionalizing settings in which experimental brain surgery would be performed on healthy human beings.

Chargaff's letter movingly teaches us once more that all of us have an obligation to consider the price we and future generations may have to pay for whatever knowledge is to be gained by "playing games with 'recombinant DNA.' " Even if one's obligations are not derivatives of some explicit ethical or religious philosophy, one could surely agree that mere prudence legitimates the raising of such questions and that placing them on the agenda is in no way anti-scientific or anti-intellectual. It is a sad commentary on our time that letters like Chargaff's require courage to write and to publish.

JOSEPH WEIZENBAUM
Laboratory for Computer Science, Massachusetts Institute of Technology, Cambridge 02139

References

1. K. M. Colby, J. B. Watt, J. P. Gilbert, *J. Nerv. Ment. Dis.* **142**, 148 (1966).
2. A. Reed, "Brain computer hookups," paper presented at the AAAS Annual Meeting, Boston, Mass., 22 February 1976.
3. H. A. Simon and A. Newell, *Oper. Res.* **6**, 8 (1958).

Circadian Rhythms

Crocodilian activity patterns may well be circadian, but the use of the term, based on the data J. W. Lang presents (Reports, 13 Feb., p. 575), is inappropriate. Circadian rhythms are by definition endogenous rhythms with a period of about 24 hours that persist even with the loss of external synchronizers, that is, under constant conditions (*1*). In the absence of such experimental evidence, characterizing the locomotor activity pattern of juvenile *Alligator mississippiensis* as circadian is premature.

PAUL KANCIRUK
Division of Biological Science, Florida State University, Tallahassee 32306

References

1. A. Sollberger, *Biological Rhythm Research* (Elsevier, Amsterdam, 1965); F. A. Brown, Jr., J. W. Hastings, J. D. Palmer, *The Biological Clock, Two Views* (Academic Press, New York, 1970).

I utilized the term "circadian" as it was originally defined by Halberg (*1*): "Thus, 'circadian' might be applied to all '24-hour' rhythms, whether or not their periods, individually or on the average, are different from 24 hours, longer or shorter, by a few minutes or hours. 'Circadian' thus would apply to rhythms under several conditions. It would describe 1. rhythms that are frequency synchronized with 'acceptable' environmental schedules (24-hour periodic or other) as well as 2. rhythms that are 'free-running' from the local time scale, with periods slightly yet consistently different from 24 hours (e.g., in relatively constant environments)." The usage of "circadian" to characterize various 24-hour rhythms was the subject of considerable debate over a decade ago (*2–4*). Some workers (*2, 4–5*) prefer to restrict the term only to those clock-controlled rhythms that persist under constant conditions.

The periodicity exhibited by certain organisms may damp out within several periods when the organisms are transferred to constant conditions. As Aschoff (*6*) points out, such a result is neither convincing proof against "endogenous" nor for "exogenous" factors. In the experiments under natural conditions described in my report, I demonstrated that movements between land and water shifted gradually into phase with altered light cycles. Phase-shifting under these conditions, I believe, is a clear demonstration of the role of a clock-controlled rhythm in the modulation of the amphibious behavior of juvenile alligators.

JEFFREY W. LANG
Department of Ecology and Behavioral Biology, Bell Museum of Natural History, University of Minnesota, Minneapolis 55455

References

1. F. Halberg, *Z. Vitam. Horm. Fermentforsch.* **10**, 222 (1959).
2. J. D. Palmer, *Science* **145**, 296 (1964).
3. B. L. Baker and R. H. Clark, *ibid.*, p. 296.
4. R. J. Wurtman, *ibid.* **156**, 104 (1967).
5. J. D. Palmer, *Biological Clocks in Marine Organisms: The Control of Physiological and Behavioral Tidal Rhythms* (Wiley, New York, 1974); E. Bunning, *The Physiological Clock* (Springer-Verlag, New York, ed. 3, 1973).
6. J. Aschoff, *Cold Spring Harbor Symp. Quant. Biol.* **25**, 11 (1960).

Clinical Lab Standards

Barbara Culliton's article (News and Comment, 7 May, p. 531) on clinical laboratory problems does not reflect *Science*'s reputation for factual reporting and a balanced analysis of issues. By emphasizing only one side of the issue, the article appears to support only massive and expensive federal nonsolutions to the problems. Concerning the need for more federal control, both the Assistant Secretary for Health Theodore Cooper and Administration officials state that there are already adequate laws and authority and indicated to the congressional committees that they have established procedures to handle the problems.

Culliton's article dismisses all of that as "euphemistic" and plunges ahead on its predetermined bias. It claims there are not enough controls and regulations over laboratories. Please note that every laboratory that takes Medicare patients (and they all do) is under federal regulatory control. The 25 states with licensing are those having 75 percent of the population of the United States. All hospital laboratories are already under multiple layers of governmental and professional surveillance.

Culliton's article fails to delineate the two key but separate issues of the whole flap. One is financial fraud; the other is the charge of serious substandard laboratory test results across all of America. They need to be analyzed and treated separately. Stealing and fraud are crimes and are so defined in Medicare, Medicaid, and state laws and regulations. It is curious that it has taken so long to discover these crimes. Culliton's article does not raise one accusing finger to ask about possible criminal negligence in law enforcement and government auditing. Why are more laws needed when the existing ones are not enforced?

To "combat" substandard work, the Clinical Laboratory Improvement Act of 1976 is proposed that will federalize scores of thousands of professionals in these laboratories. This will be very complicated, very expensive in dollars and bureaucratic red tape, and worst of all, it deals with problems already being solved. Culliton's article does not discuss any of the many serious costs and counter-efficiency effects that further government controls will have in this field. The least expensive and only way to really solve the problems is to have the federal and state governments work with the responsible professional societies to strengthen their monitoring and enforcement systems, with each using its already adequate authority and respective expertise.

The reader of *Science*, having heard only one side, can draw only one conclusion. Such a presentation of a single option is below *Science*'s standards.

WARREN L. BOSTICK
Office of the President, American Society of Clinical Pathologists, 2100 West Harrison Street, Chicago, Illinois 60612