Letters

Analysis of UFO Reports

I am pleased to see that a few scientists are offering comments on the subject of UFO's (Letters, 2 Dec., 23 Dec., and 27 Jan.). These support Hynek's contention (Letters, 21 Oct.) that lack of scientific attention is both cause and effect of the disrepute in which UFO's are held. Burke-Gaffney said that UFO reports do not furnish evidence of extraterrestrial intellectual beings. Of course, it is the fact that our best five or six hundred reports, if taken at face value, all point precisely to this conclusion which has caused otherwise respectable scientists to bother with UFO's and to search for a way to determine the truth or falsity of this subclass of reports. One does not get the impression that the good reports are so explicit from reading the morning newspaper; one must go to the original documents and talk to the witnesses directly.

Cannon's contribution of the Dunbar sighting of 1800 will add to the hundreds of other reports from before 1900. The effects of contemporary technology on interpretation as mentioned by Cannon have been discussed several times; Ezekiel saw a flying throne, and in the Middle Ages, peasants saw glowing spherical chariots landing, spewing forth angels. In the great wave of 1896–97, thousands of people from San Francisco to the Midwest saw "airships," with gondolas, paddle wheels, and fins. One would like to know whether technology has the unfortunate result of breeding mass hallucinations, or if we are safe in pushing on further.

Cannon's suggestion that UFO's are the result of visual "reflexes" may apply to some sightings—he is certainly not the first to suggest this possibility—but to make the hypothesis serve for all sightings is impossible. When one studies original reports and interviews witnesses, he becomes aware that UFO's fall into classes, and that an explanation that might apply to one class does not apply to the others. After all, there are other manifestations besides things that look like spaceships which could baffle a person with an average education. Any attempt to explain all UFO reports as satellites and meteors, or as hallucinations, or as misinterpretations of ordinary phenomena, or as plasma, or as hoaxes must fail. The UFO phenomenon is not homogeneous. In 1954, over 200 reports over the whole world concerned landings of objects, many with occupants. Of these, about 51 percent were observed by more than one person. In fact, in all these sightings at least 624 persons were involved, and only 98 of these people were alone. In 18 multiple-witness cases, some witnesses were not aware that anyone else had seen the same thing at the same time and place. In 13 cases, there were more than 10 witnesses (*1*). How do we deal with reports like these? One fact is clear: we cannot shrug them off.

WILLIAM T. POWERS
Dearborn Observatory,
Northwestern University,
Evanston, Illinois 60201

Reference

1. J. Vallee, *Challenge to Science* (Regnery, Chicago, 1966).

Biology and the Human Condition

Morison's hypothesis that sex and reproduction are becoming separate functions relies too heavily upon observed structural distinctions ("Where is biology taking us?" 27 Jan., p. 429). Conceiving, bearing, and rearing children are integrated components of female sexuality. Men share in the gratification, sometimes as much as their mates, but not from biological necessity. Women will have children, in spite of the availability of contraceptives or abortions, and with or without husbands. If the importance of the family diminishes, and mothers must take solitary responsibility for their offspring, society will regress to a primitive matriarchy. No matter how selective the genetic controls become, life under such a minimal economy would offset the intended advantages of heightened natural ability.

Since the population explosion is an immediate threat, it deserves consideration. Deprived people, the hopeless, frightened ones are the most likely to be overgenerous biologically. It may be possible to effect a humane stability by assisting these people to rear their children in environments which offer the expectations, the stresses, and the rewards of complex communities. When the future is too forbidding, there can be no planning at any level; reproduction then repeats its cycle within basic biological limits without the braking influence of stressful human goals. It could be that our efforts to improve the world economy are now contributing to moderation in population increase.

HARRIET MOSS
5928 Anniston Road,
Bethesda, Maryland 20034

As a historian I deem it essential that your readers who heard Robert S. Morison, the biologist, should also harken to the voice of historian Elting E. Morison, his brother.

> . . . I believe . . . that the intelligence is one of the determining things about man. I am with Whitehead where he said that today the rule is absolute, the society that does not value the trained intelligence will die . . . I [also] believe that man is a creature distinguished not only by the intelligence but by the affections as well, which means I guess, that he is a creature of rapture and despair. But which means also that the affections have an existence, an identity, a set of needs and claims, a shaping influence in the life of man that is their independent own. Man is, not only because he thinks but because he feels, and it is the interaction between these two impressive energies that establishes what people today love to call the human condition . . . we must examine with care whether the rule is not equally absolute: the society that does not value the educated heart—or wherever the seat of the affections is—will also die (*1*, p. 82).

He also said this to scientists who love to use computers:

> I think we may have more difficulty in exploring the full limits of the computer than we have had with earlier gadgets. I think there may be more danger in the period of trial and error than there has been with earlier devices. These earlier devices—looms, engines, generators—resisted at critical points human ignorance and stupidity. Overloaded, abused, they stopped work, stalled, broke down, blew up, and there was the end of it. Thus they set clear limits to man's ineptitudes. For the computer the limits, I believe, are not so obvious. Used in ignorance or stupidity,

asked a foolish question, it does not collapse; it goes on to answer a fool according to his folly. And the questioner being a fool will go on to act on the reply (*1*, p. 91).

GERD KORMAN
New York State School of Industrial and Labor Relations, Cornell University, Ithaca 14850

Reference

1. E. E. Morison, *Men, Machines and Modern Times* (M.I.T. Press, Cambridge, 1966).

Pressures at St. John's

Sarno's comments (Letters, 17 Feb.) on Luther Carter's references (News and Comment, 16 Dec., p. 1428) to the captive AAUP chapter [American Association of University Professors] at St. John's University, Jamaica, New York appear to be an uncritical attempt to preserve a veneer of apparent respectability for a sorry educational spectacle. The indications are that St. John's University tolerates professors and professors' organizations on its campus that do not offer critical opposition to its administrators, and banishes individuals and organizations which fail to swear unquestioning fealty. Observers of the struggle for academic freedom at St. John's must agree with Carter that the AAUP chapter at St. John's is now "under the domination of administration sympathizers." Otherwise, would St. John's permit its continued existence?

In December 1965, the violations of academic freedom occurred with the firing of many faculty members. In January 1966, the dues of 32 members of the Vincentian religious order were paid by a single cashier's check (presumably purchased by the St. John's administration) in order to enroll them as new members of the AAUP chapter. (Prior to that, only one Vincentian had belonged to the chapter.) In February 1966, the "election" to which Sarno refers was held. Certainly Carter's conclusions seem justified. An "election" of new officers following the forcible elimination of dissenters and the packing of the electorate might conceivably be described as conforming to certain formal elective procedures, but it assuredly lacks the essential substance of the free democratic process.

JULES H. DRUCKER
450-10 Atlantic Avenue, East Rockaway, New York 11518

Safe Use of Propylene Oxide

Kulik's warning (Letters, 27 Jan.) regarding the haphazard use of propylene and ethylene oxides as nondestructive sterilizing agents should be heeded, but needs qualification. These materials are explosive when mixed with air, as is ether, but it is my experience that when used correctly, under vacuum, no risk is involved. I have successfully and safely used ethylene oxide (70 percent by volume) under vacuum for many years to cold-sterilize wood samples to be used for studies of fungal decay. Providing a water pump is used for evacuation, no risk is involved with this closed system. After the sterilizing period, excess ethylene oxide can be removed without hazard through the water pump. I have also used propylene oxide under vacuum as a sterilizing agent; however, this gas is less than half as efficient as ethylene oxide on a comparative volume basis. Also, rate of diffusion of ethylene oxide into biological samples is much less than that of propylene oxide.

Kulik's suggested use of "quenched" mixtures of ethylene oxide and either freon or carbon dioxide is, in my experience, not always successful for complete sterilization. Such mixtures generally contain only 10 to 12 percent ethylene oxide, a concentration minimal for absolute sterilization, or even ineffective against resistant spores.

ROGER S. SMITH
Forest Products Laboratory, 6620 N.W. Marine Drive, Vancouver 8, British Columbia, Canada

Pollution and Self-Purification

Abelson's editorial, "Toward cleaner streams" (16 Dec., p. 1401) is helpful in calling attention to improvement in water quality as the result of managing the biodegradation of domestic wastes from municipalities. The naturally occurring aquatic biota of most streams are known for their ability to degrade common domestic organic substances, which have been with us as long as life on earth. These aquatic organisms play a most important role in stream self-purification because their communities shift the kinds and numbers of their members to accommodate changes in the amount and chemical characteristics of the domestic wastes.

However, his editorial omits discussion of the large quantities of toxic (to stream self-purification organisms) inorganic wastes and of newer synthetic chemicals that do not undergo biodegradation or which interfere with the metabolism of many beneficial stream biota, thus promoting large standing crops of nuisance planktonic algae. These undesirable algae become a part of pollution because they are unsightly, often impart taste and odor, and have been known to kill fish and other "good" aquatic organisms by producing toxins or by consuming the necessary dissolved oxygen supply.

Most pollution is an ecological phenomenon and has more subtle factors than generally realized. In our big industrial rivers the solution to pollution is not dilution, as generally practiced, but the use of influence to eliminate or reduce industrial effluents, which prevent or interfere with the stream self-purification capacity.

LOUIS G. WILLIAMS
1401 Collinsdale Avenue, Cincinnati, Ohio 45230

Science in Non-Western Cultures

Dart and Pradhan have come to grips with a serious problem for agents of cross-cultural change ("Cross-cultural teaching of science," 10 Feb., p. 649). The problem is especially acute in the teaching of science and in science curriculum design, since there is no currently acceptable alternative to the rational system we call science in modern Western culture, whereas there are very acceptable alternatives in history, social studies, languages, home economics, and others. Teachers with some background in anthropology are increasingly aware that vast indigenous cultures in foreign countries may be endangered. Yet, as representatives of American culture, we have a strong tendency to employ our own dogmatic either-or teaching methods and solutions.

A point which may have been lost is the critical nature of the time period we commonly consider grades 1 through 3, or ages 5 through 9. There is evidence in the research of Piaget (*1*) and others that unless we are able to shape scientific thinking within this period, when the child is setting up perceptual and logical filters that he will carry with him the rest of his