Letters

Are We Becoming Hereditary Weaklings?

As a practicing physician well aware of the shortcomings of American medical theory and practice I am profoundly disturbed by Robert F. Mueller's attack (Letters, 26 Sept.) upon the humanitarianism of medical practitioners who have "forgotten that death is a part of the cleansing process by which the race is renewed." This viewpoint, with its solicitude for the "biological constitution of man" and the "possible biological unsoundness of modern medical practice," evokes memories of the late unlamented "super-race" concept. In attacking the humanitarianism of American medicine Mueller has set himself against one of the loftiest facets of American science. . . .

Humanitarians in medicine and biology have proved that developmental defects once thought to be due to heredity may be due to German measles (Gregg, 1941), x-rays (Bagg, 1929), dietary defects (Peer *et al.*, 1963), drugs (Ingalls, 1963), and even exposure to radar (Lilienfield, 1965). Had all physicians been sold on genetic causation of defects what would we know of thalidomide today? In all of these cases questioning of the accepted genetic explanation led to positive preventive medicine. In human medicine what genetic explanations have been proved valid? Even the sickle cell phenomenon has been shown to be an adaptive variation very valuable in the original environment in increasing resistance to malaria.

In the light of this it may be more proper to speak of the medical unsoundness of biological and chemical theory. Physicians must search out biological and chemical causes of damage to human beings. A recent example is the "CS" gas developed here but used by the Londonderry police against civilians and which resulted in severely damaging diarrheas in 65 to 100 infants. Unfortunately some biologists, some chemists, and some physicians have developed toxic agents that may ultimately show up as congenital malformations. But I hope their concern . . . is with saving lives.

To speak of physicians who have "distorted their humanitarian role in preventing death" is to attack the most sacred concepts of the great physicians from Hippocrates to the present. René Dubos stated it well (*1*): "The humanization of mankind was the flowering of reason. As reason falls asleep or becomes intoxicated, monsters take command of civilization and man loses his humanity, even though he may gain wealth and power."

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Reference

1. R. Dubos, *Dreams of Reason: Science and Utopias* (Columbia Univ. Press, New York, 1961).

Mueller writes: "Even elementary biology tells us that hereditary disease or susceptibility to disease which leads to death or diminished reproduction rids a population of genes which perpetuate these maladies." "Elementary biology" tells us nothing of the sort. What Mueller is saying is that medical advances permit those who might have died in less sophisticated times to live into the reproductive years and so distribute their "faulty gene" into subsequent generations. Juvenile diabetes or hemophilia might be examples. By this reasoning the "advanced" societies (to use Mueller's term) are, genetically speaking, going downhill and becoming increasingly burdened with hereditary weaklings.

One cannot do better than cite Medawar in reply (*1*):

> The "going downhill" argument seems to contemplate the predicament of modern man in primitive surroundings without insulin, penicillin, central heating and other allegedly debilitating devices; but it is not clear why such an exercise is supposed to be informative.

The point is that harmful genes do not weaken the population's genetic pool in the way that the "downhill" school believes. It is often just the opposite in fact. Harmful genes sometimes confer protection. . . . Even genetic conditions which appear on the face to be totally harmful, such as phenylketonuria, can respond to treatment. As Medawar says, it is an illusion to suppose that congenital afflictions are incurable and if such afflictions are in fact cured "we shall in no sense be conniving at a genetical degradation of mankind."

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Reference

1. P. B. Medawar, *The Future of Man* (Basic Books, New York, 1960), p. 108.

More Heat Than Light

The Nobel Foundation symposium on values (3 Oct., p. 92) is an excellent example of how the scientific community is steadily isolating itself from the world it purports to serve. To begin with, take only top-name people for participants—this serves two purposes—first, to stifle any dissent from the views expressed, and second, to present a more effective aspect of "talking down" to the rest of the world. Hold the conference behind closed doors so that any spontaneous discussions and disagreements never reach the public ear. Go in with the attitude expressed by Koestler that we show too much reverence for "students with half-baked ideas." Finally, in case anyone should dare to question, play Lorenz's game of one-upsmanship saying "we hate the establishment *more than you do*" (emphasis added).

Factors such as these can only reinforce the growing feeling by the lay public that science and scientists are irrelevant to any real-world problems. In fact, one is almost forced to conclude that the approach of these individuals is counter-productive. What possible purpose can be served by an attitude such as Koestler's? Is his memory so poor that he has forgotten when his own ideas were called half-baked? Is the generation gap (loathsome term) bridged by Lorenz's aggressive game of "I'm as radical as you are—*more* even"? Indeed, what purpose can a conference such as this serve? The public is tired (with good reason) of blue ribbon panels; they recognize that such panels and conferences generally give off far more heat than light, and are too often organized to give the appearance of genuine concern when only superficial concern

exists. I can only echo the warning of Auden—if we concern ourselves with "scales too gigantic or dwarfish," we are in danger of being totally ignored by a world that can do so only at its (and our) own peril.

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Why Europe's Grass is Greener

As a former Englishman and an avid gardener who has lived in the United States for almost 12 years, it is easy for me to see why Abelson finds flowers almost everywhere in Europe and seldom in the United States ("Microcosms in a world apart," 29 Aug., p. 853). The extremes of temperature found in most American cities make flower growing difficult, and an operation that requires constant attention. In contrast, in most places in Europe one can plant flowers and almost forget about them. In San Francisco, where there are not the extremes of temperature, there are flowers that will rival any European display. A visit to the Golden Gate Park or Union Square should prove this point.

Perhaps Abelson has also slighted Chicago. Recently my family and I were in the Lincoln Park Conservatory where we saw a breathtaking display of orchids, and my children were able to see bananas growing. In the zoo and farm area one can see animals from all over the world, watch cows being milked, or take a leisurely row on the lagoon. . . . I agree that there is room for improvement, but must protest that if the grass is greener on the other side of the Atlantic, perhaps it is just because the weather is more conducive to growing green grass.

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Ecology Crossfire

Fahnestock (Letters, 3 Oct.) advises us to distinguish between what is ecologically necessary and that which is merely ecologically desirable, urging us to banish emotion so that we can make the distinction honestly. His contention that bald eagles, for example, aren't really necessary leads to the view that esthetic values have no ultimate place in any sensible scheme for regulating our environment; that is, we do not need to be other than dull. Furthermore, I wonder if it is not a bit emotional to stump for that which is ecologically necessary only for our exclusive selves. If it were shown that smog had a worse effect on man than on bald eagles, shouldn't some of us then promote air pollution to prove our complete scientific detachment?

Fahnestock says also: ". . . we seem to be getting along pretty well without the moa, the dodo, and the passenger pigeon." Not so. I am perfectly miserable without them.

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Jukes' interpretation of the ecological effects of DDT (Letters, 3 Oct.) does not conform to the prediction, made long ago (*1*), that the effect of an agent which increases the mortality of both predator and prey in a two-component system is to decrease the average numbers of the predator and increase the average numbers of the prey. This is why the usual effects of broad-spectrum biocides in simplified systems (such as agricultural croplands) is to increase the numbers of phytophagous insects and to decrease the numbers of their predators (or parasites) (*2*). In ecosystems with more than two trophic levels, this effect may act on any pair, or on more than one pair, of species; ecological theory at present gives no way to predict which pair will be affected most.

DDT and other persistent pesticides mentioned by Fischer (*3*) are present in almost every ecosystem (*4*). Hence, whenever a species is observed to increase suddenly while its predator (or parasite) decreases, it is reasonable and logical to propose, as Fischer did, that a persistent pesticide *may* be responsible. This, of course, is only one of a number of alternative hypotheses which must be investigated simultaneously in every ecological situation . . . (*5*).

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References and Notes

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2. N. W. Moore, *Advan. Ecol. Res.* **4**, 75 (1967).
3. J. L. Fischer, *Science* **165**, 645 (1969).
4. C. F. Wurster, *Biol. Conserv.* **1**, 123 (1969); American Chemical Society, *Cleaning Our Environment—the Chemical Basis for Action* (Amer. Chem. Soc., Washington, D.C., 1969).
5. T. C. Chamberlin, *Science* **15**, 92 (1890); *ibid.* **148**, 754 (1965).