

A five-year-old dog is different from a prenatal dog; so is a fifty-year-old biology professor different from a fifty-day-old embryo. "Dogness" and "humanness" progressively change, in response to the environment and to the successive expression of gene sets; but such changes never change a nondog into a dog, or a nonhuman into a human. If the human embryo is not human, what is it? If we abort it, let's have the guts to admit to what we are aborting.

#### AN UNINVITING VIEW?

I would like to share with you the following conclusions that I have reached concerning what, about Professor Val Woodward's article "Science Ideology: A View from Indochina" (*ABT* 36[1]:21 and [2]:87) makes it so—well, so uninviting.

It is not purely its vulgarity. To be vulgar, after all, is to be common; and that which Professor Woodward presents is, and has been for some time, all too common—particularly in the academic community. Woodward covers with the gloss of scientific purpose, demi-jargon, and "documentation" all that which has been Philistine on campus for the last several semesters.

Further, the good professor's intolerance, taken alone, is not terribly disconcerting, though it is intolerance of a particularly insidious species, intolerance that wears the cloak of tolerance, an intolerance that is quick to relate the concinnity of Communist Vietnam while quick to take issue with the real or imagined shortcomings of our own country, our own system, our own institutions. The tone of the article suggests Woodward as priest, robes of righteousness all wrapped about, dispensing like blessings all the homilies and clichés of the hemophilic liberal. "War Crimes Commission of the Democratic Republic of Vietnam" indeed! Somehow one suspects very strongly that such war crimes as the execution of thousands of Vietnamese in the Hue following the Tet offensive were not investigated by this group. Dr. Woodward's intolerance is of the variety that veers him toward the wide-eyed and breathless acceptance of the word of an official of a petty communist puppet state—the "president of the DRVN supreme court," for instance—while at the same time he is quick to question the "military propagandists" of his own country.

Dr. Woodward's commentary on medicine in the "Democratic" Republic of Vietnam merits consideration also. "No one," he assures us, "will ever be mystified or oppressed by professional medicine in the Democratic Republic of Vietnam." If the condition of certain of our prisoners of war who returned is any indication, there is not much "professional medicine" to be mystified or repressed by, north of the DMZ. Or perhaps there is, and selectivity in its use does in fact represent the "ethnic weapon" that Dr. Woodward evidences such concern about. Then again, perhaps the Communist North Vietnamese's forte lies

not in the medical field, but in the field of political purge. After all, Uncle Ho and his heirs did (and do) have rather bloody hands, having put hundreds of thousands of their own countrymen to death for purely political reasons.

On reading Professor Woodward's optative revelations concerning the "facts" that we have been engaged in the practice of making "patch bomblets" loaded with ground glass for the purpose of maiming the barefoot and hapless peasants of South Vietnam and that we have disguised our antipersonnel mines as "dog turds," to be picked up by innocent farmers searching for fertilizer, I began an informal survey of friends, students, and acquaintances of mine who are or have been in the military service and have served in Vietnam for from one to four years and asked about their knowledge of such weapons. These persons, some dozen or so including NCO's, junior and senior officers who represented various combat arms, and including several with special expertise in weaponry, have never seen nor heard of such items. It would seem that they find their existence only in the overheated imagination of a few. Professor Woodward informs us that "anti-ethnic weapons (agents that act selectively against persons of one racial origin but not on persons of another) have not been used at all." Lest, though, we detect some glimmering of mercy, some suggestion of restraint in the conduct of United States foreign policy, the author hastens to add that "the best explanation for the omission of this genocidal technique is simply that we don't have any such agent." (And that, sir, is precisely the same reason that pigs don't fly: they lack the wings.) Imagine! The uniformed and medal-bedecked general and his bloated and malevolent co-villain, a captain of industry pouring over, what else?—Val Woodward's article. "And these—these *ethnic* weapons," intones the industrialist to his henchman, "ah, but if we only did have them!" It is amazing, though, isn't it, how quickly a visit to Hanoi confers on the traveler an expertise on the conduct of war; on U.S. weaponry, motives and foreign policy; on ideology; and on the latest goings-on in Communist Vietnam?

And about that trip to Hanoi: now some might say that one who has given aid and comfort to the enemy has committed a serious offense—one worthy of hanging perhaps. I would consider this excessive, though. Society doesn't punish the commonplace, and such trips, though they were theatrical, were all too common. With a few more of the varied and sundry Nutty Buddies trotting off to Hanoi, therefrom to save the world, Whatsizname could've put out a book called *Communist Vietnam on \$5.00 per Day*. He'd have made a fortune.

And finally, not even Professor Woodward's turgidity of style and meandering of theme are in and of themselves particularly offensive. Indeed the turgidity and meandering evoke the hope, however faint, that Dr. Woodward's article represents not sincere but misguided political expression, but a great and gasping effort for the author to void him-

self of all that is toxic, of all that is degenerate in his own store of ideological concepts.

Indeed, it is not Dr. Woodward's looseness that offends the most severely, but that of the editors of *The American Biology Teacher*. If the editors are so short on material that we must be served up great heaping hunks of anti-American propaganda with our monthly diet, may I suggest as an alternative that you print either my recipe for sweet and sour pork or perhaps the one for peanut soup. They're more intriguing, have more biological portent, and are certainly much more palatable.

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*Val Woodward comments:*

Guthrie's response to my article isn't unpredictable, given the quality of his educational experience, but it is an extreme case. I first considered responding to it point by point, until I re-read it and found it to be without one. On second reading his words appeared more a Benedictine rule for humankind, one with which I disagree. Guthrie is at his best when he speaks for himself. . . no interpreter could further illuminate his message. I would, however, caution anyone who may take Guthrie seriously to check his "facts," note the quality of his reference citations, and to assay his "logic" for androgens and epinephrin.

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## *Purification System . . .* from p. 345

tank into the second tank (stage 6). This second algae tank provides additional surface area.

The algae growing in these tanks are a culture of a common marine blue-green alga, *Oscillatoria*. Two 100-watt light bulbs burn continuously above the algae tanks as an aid to the algal reproduction. The algae reproduce very rapidly under the proper light conditions, so they should be thinned out monthly by removing large masses that accumulate in the channels. The channels of the tank should be designed so that, in case of a power failure, water will be contained in the channels to keep the algae alive. At the end of the channel of the second algae tank, some kind of mesh should be installed, to help prevent the algae from leaving the second tank.

Beneath the second algae tank (fig. 5) is a third styrene-foam tank, which is the final filtration unit (stage 7). This tank is similar to the algae tanks except that it contains large amounts of charcoal,

diatomaceous earth, and gravel. This final filter unit prevents the algae from entering the specimen tank, thus keeping the tank clear.

## *Evaporation, pH, and Feeding*

The total capacity of the specimen tank and filtration unit is 152 l (40 gallons) of water. Evaporation of water from the system is kept at a minimum if the algae tanks are covered with a clear plastic film. (This also helps to keep dust from entering the system.) Very little salt will condense on the styrene foam; thus, any water lost by evaporation can be replaced with fresh water, to maintain the proper salinity.

Another important aspect of the water in a marine tank is pH. Animal specimens cannot adapt to a rapid fluctuation in the pH; and pH changes can occur very rapidly in seawater. The natural control on this system has kept the pH of our tank at a constant 7.1, which is just about neutral.

All animal specimens are fed once a day with frozen canned shrimp. Occasionally a piece of lettuce is attached to some coral and is allowed to sink to the bottom of the aquarium. This helps to maintain a proper diet for the crabs and sea urchins. A light by the specimen tank is controlled by an electrical timer, which turns on the light at feeding time and shuts it off 2 hours later.

*Acknowledgment.*—The photos are by Douglas Lirette, of Eastern Michigan University.

## REFERENCES

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## Real Relevance

. . . I believe the real relevance of science is to cultivate, as immediate or ultimate goals, a vision of the resolution of the great mysteries of nature. As we toil at our individual tasks, investigating the function of a gene or the structure of a membrane or the specificity of a synapse, we gain if we connect our work with some further and grander goal.

S. E. Luria, "What Can Biologists Solve?"  
*New York Review of Books* 21(1):28