

ardous agents, rather than turning them into weapons. In defensive research, USAMRIID's Huxsoll explains, scientists look at a virus' chemical nature, its size and structure. They learn what it infects, how to cripple it and how to grow it in limited, laboratory quantities. On the other hand, he says, scientists making a weapon would look at how to stabilize the virus, make it more potent and disseminate it, and how to grow it in large quantities.

Military scientists add that biological defense research often ends up benefiting public health efforts in areas neglected by other research efforts. Michael Buchmeier of Scripps Clinic in La Jolla, Calif., a recipient of both DOD and National Institutes of Health funds for his research on the often deadly Lassa virus, says: "It is difficult to get money to study diseases such as Lassa fever. We've gone to major companies and been refused funds. One agency with a good track record is the Army." Buchmeier says Lassa fever is a substantial public health problem in African countries, such as Sierra Leone, where it accounts for approximately 30 percent of the hospital deaths and a substantial number of mis-carriages.

Critics counter that such militarily supported research has other international consequences. Growing and working with biological agents within an Army-supported research facility not only

draws the nation closer to using those agents as weapons, but also leads other countries to suspect the United States is performing offensive research, they argue.

"If the United States makes a vaccine against a biological warfare agent, it provokes other countries to make other biological weapons," Jacobson says. "This leads to an escalation of weapons, as is occurring in the nuclear arms race." Shifting the DOD's biomedical research to civilian agencies, such as the National Institutes of Health and the Centers for Disease Control, critics contend, would reduce what Rifkin terms a microbiological version of "missile-gap paranoia."

With such a dichotomy of opinions, a modified biological defense effort acceptable to both sides seems unlikely. However, at this summer's Senate hearings, subcommittee chairman Carl Levin and Army representatives agreed that DOD-sponsored laboratories should abide by the same safety guidelines as the National Institutes of Health and the Centers for Disease Control. Both critics and some biological warfare researchers are increasingly discussing the necessity of an open research program, a sort of "global defense," as Jacobson calls it.

Dalrymple explains why the military may support such a defense: "If I could build a vaccine and put it in the literature, it would be a deterrent to any evil person thinking to put out these agents as weapons."

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— BDRP virologist Joel Dalrymple

Biomedical ethicist Thomas Murray, of Case Western University School of Medicine in Cleveland, cites another reason for openness. He believes people are afraid of biotechnology because they are aware that groups or individuals with mixed motives might create dangerous organisms, or that well-meaning researchers might do so unintentionally. "Fears," he says, "are seriously exacerbated by secrecy." □

Letters

Fetal fracas

The use of fetal tissue ("Fetal Cells Enter the Fray," SN: 11/5/88, p.296) cannot be separated from the abortion, since without the abortion, the tissue and organs of that fetus would not be available to anyone else.

Using the sacrificed life of one human individual for the purpose of prolonging the life or treating an ailment of another has never been an accepted practice in medical science. This research lowers the dignity and standards of research.

Monte Harris Liebman, M.D.
Milwaukee, Wis.

Rick Weiss' report that researchers see no reason to waste a potentially beneficial resource (fetal tissue) that is obtained from a perfectly legal procedure (abortion) reminds me of German efficiency during the Second World War when they tried to alleviate a soap shortage by making soap from the bodies of victims of the Holocaust.

To carry the concept a little further, with the way meat prices are rising, why do we dispose of the bodies of accident victims? We are wasting human protein that could be put to a better use in feeding the hungry.

Julius Nadas
Chicago, Ill.

Perhaps women should be remunerated for the fetal tissue from their induced abortions. This would subsidize the often prohibitive cost of the procedure while abetting

research promising to soothe the physical woes of the flesh — positive consequences that may ease the trauma women associate with such a volatile issue.

John Colwell
Seattle, Wash.

The moral response to abortion is not to salvage cells but to save the lives of one truly precious natural resource, one truly oppressed minority group. Researchers can make do with spontaneous abortions and those necessary to save the mother's life; patience; and a generous conviction that another generation of biochemists and taxpayers must follow and sustain them.

David M. Williams
Ann Arbor, Mich.

The Bible, interesting sociomythological document that it is, has been construed by at least one sect to forbid blood transfusions. Arguments against fetal-tissue use based on the morality of abortion are on a par with such nonsense. In a nation that supposedly separates the religious establishment from the political process, the truly unethical element of the issue is the government's pandering to illogical minority pressure groups, thereby denying a possible medical treatment of great value to society as a whole.

Godfrey A. Sundmark
Bronx, N.Y.

Why did you turn an ethical debate centering on women over to men? Of a total 21 quotes, the speaker's gender was apparent in

18 cases. Of these, 14 were from men and only four were from women. The author of the piece was also male.

Barbara Mann
Toledo, Ohio

Your question might best be put to the National Institutes of Health, which included on its 21-member advisory panel only four women. As for my being male, I have no defense. — R. Weiss

Forgotten fossils

It seems the Society of Vertebrate Paleontology wishes to impose its own idea of fossil preservation ("NAS fossil report: Lacking backbone?" SN: 10/22/88, p.262). Probably the best way for a fossil specimen to disappear is for it to be collected by the paleontology lab of a large museum. Though excavated with the best of intentions, it is almost certain to be squirreled away with tens of thousands of other specimens. There, in the vast catacombs, it will rest in perpetual anonymity — undisturbed, unstudied, undisplayed and unremembered.

Jon M. Kramer
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Golden Valley, Minn.

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