NIH committee envisages *E. coli* as the organism of choice because, through its having become a standard laboratory workhorse, more is known about its behavior than about that of any other bacterium. But the fact that *E. coli* infects man, argues Goldstein, that it easily becomes airborne and lodges in the throat, makes it a "reckless" choice and "ecologically unsuitable" as host to recombinant DNA molecules of potential hazard. (The committee's microbiology expert, Stanley Falkow of the University of Washington, Seattle, considers the K12 strain of *E. coli* to be enfeebled to the point of being relatively harmless, but even he believes that "we are ignorant in large part of the ecology of *E. coli* and of its plasmids and its phages.")

Because of the infectivity of *E. coli*, Goldstein says, the physical levels of containment recommended in the Woods Hole guidelines are "practically meaningless" except for the highest level, P4. *Escherichia coli* should be used as a host only for comparatively safe experiments until a new bacterial host is developed which cannot infect man, Goldstein contends.

Another critique of the Woods Hole guidelines is being prepared by the Genetics and Society group of Scientists and Engineers for Social and Political Action. A member of the SESPA group, Jonathan King of the Massachusetts Institute of Technology says that the function of the NIH committee, as presently constituted, "is to protect geneticists, not the public." Hogness, chairman of the subcommittee that wrote the original guidelines, is an active worker in the recombinant DNA field, which King likens to "having the chairman of General Motors write the specifications for safety belts."

Szybalski, a member of the Hogness subcommittee, agrees that there was a potential conflict of interest but defends Hogness by saying he acted with impartiality: "Hogness did an admirable job and tried to be fair, but he is very vulnerable to that criticism; I admire him for doing the job well and for his courage in taking it on," Szybalski says. Hogness rejects the charge of conflict of interest, saying that in the area he is working in, shotgun experiments with *Drosophila*, there is no disagreement he knows of on what the appropriate safety precautions should be.

The Hogness subcommittee has now been disbanded and the initiative at present seems to rest with the Kutter group. Who is Elizabeth Kutter? She became a member of the committee only after the July meeting, which she attended as an observer. Her name was proposed to the committee by Szybalski, who had met her at a conference in Canada. She was co-opted partly in response to the committee's desire to have a layperson, or at least a semilayperson, as well as some one from a small college, among their ranks. Kutter in fact has a Ph.D. in biophysics and works with phages.

At a meeting in May Kutter suggested to the committee that she hold a session on constructing safer phages at the Cold Spring Harbor phage conference in August. Before the conference she expressed her concern about the Woods Hole guidelines to Goldstein and King in Boston. Her session at the phage meeting turned into a general criticism of the guidelines, and it was from this session that the Goldstein-Echols petition was set in motion.

Panicky Reaction

In response to this and maybe other criticisms, the NIH asked Kutter to draw up new guidelines, an action which has caused some distress among committee members. Szybalski regards it as a "terribly panicky reaction to criticism." All that was necessary was to revert to the Hogness draft, he says, since it was in fact the changes in the Hogness draft that the critics were objecting to. Committee chairman Stetten comments that in retrospect, "It is possible we did not react as judiciously as we might have, but there was an emotional and significant wave of criticism in some quarters against the Woods Hole draft."

Kutter's task has been made more difficult because of a report emanating from Goldstein (who says Kutter told him so) that the Woods Hole guidelines have been scrapped. "That made me climb the wall," says one committee member. According to Stetten, the NIH committee has not set the Woods Hole draft aside, but rather is "looking at it again." Kutter, however, is using the Hogness draft, not the Woods Hole version, as her basic text; the Woods Hole version, she says, "is not being put into effect."

The Kutter subcommittee, which met early this month, consists of herself, Falkow, and Joe Sambrook of Cold Spring Harbor. Sambrook is not a member of the committee but represented a subgroup on animal viruses working under Wallace Rowe of NIH. Kutter is taking input from a large number of sources, including Hogness, Berg, Joshua Lederberg of the Stanford University Medical Center, and the various letters received by the committee. Her goal, she says, is "to get together all the dissenting ideas and come up with compromises."

Several committee members, Stetten included, are anxious to prevent the committee becoming polarized into opposing camps. Given the paucity of data on which to make a decision, and the conflicting pressures on the committee, it is not surprising that there should be a range of views. "We are being asked to set guidelines based upon hazards based upon accidents which have not yet happened. Even Lloyds of London is unwilling to write insurance on accidents for which there are no actuarial data," says Stetten.

Despite the darkness in which the committee is working, pressures are mounting for it to take a leap anyway. "If you keep everybody waiting, there is going to be stuff done on Saturday night," says committee member Jane K. Setlow of Brookhaven National Laboratory. "Many people I know have invested in P3 containment facilities and are being held up for lack of guidelines," notes Hogness. Stetten intends to produce a set of guidelines at next month's meeting. But the committee is in the unenviable position that however hard it tries, it is unlikely to make everyone happy.—NICHOLAS WADE.

RECENT DEATHS

Leslie O. Ashton, 83; professor emeritus of pediatrics, New York University; 2 September.

Fernando G. Bloedorn, 61; professor of therapeutic radiology, Tufts University; 6 September.

Oliver W. Burke, Jr., 65; president, Burke Research Company, Pompano Beach, Florida; 9 August.

Harold T. Cook, 71; former director, marketing research, U.S. Department of Agriculture; 13 August.

Lester R. Dragstedt, 81; professor emeritus of surgery, University of Chicago; 16 July.

Royce G. Kloeffler, 85; professor emeritus of electrical engineering, Kansas State University; 29 July.

Knut A. Krieger, 64; professor of chemistry, University of Pennsylvania; 19 July.

Charles L. Lazzell, 78; professor emeritus of chemistry, West Virginia University; 10 June.

Daniel J. Nelson, 49; assistant director, environmental sciences division, Oak Ridge National Laboratories; 16 August.

Edgar Stedman, 84; reader emeritus, biochemistry department, University of Edinburgh Medical School, Scotland; 8 May.

Perry R. Stout, 66; professor emeritus of soil science, University of California, Davis; 14 July.

Raymond W. Swift, 80; professor emeritus of animal nutrition, Pennsylvania State University; 11 July.