bers of the pediatric oncology branch who wanted to keep their transplant program going. His anger at the situation was heightened because the patient's family had been given false hope about a transplant. He fired off an angry memo to DeVita recounting the events. Written last July, before the present controversy, it stands as an important part of the record the medical board is examining. Wolff is adamant in saying that the decisions made about his patient had nothing to do with Teddy DeVita.

What will come of all this remains to be seen, but some things can be said. It is all but certain that DeVita will be vindicated by the medical board, which will find that Teddy's admission to NIH was proper, as was the decision not to put another child in laminar flow. It is also certain that neither the medical board nor anyone else is going to say that Teddy should be discharged from his sterile room.

Were he to leave his isolation, he would probably be dead of overwhelming infection within a couple of weeks. Because he is extremely bright and creative, his doctors say, he has been able to survive the psychological stress of his terrible isolation remarkably well. Although at times he becomes angry or depressed, psychiatrists who have followed his course closely say that is a perfectly normal way to cope with such a predicament. But they also say he has become more and more depressed lately as he contemplates the future. He has, on occasion, threatened to just get up and walk out, and he has said he will not stay unless the doctors continue to try new things to get his bone marrow functioning again.

Teddy's admission to NCI came at a time when cancer researchers were optimistic about progress in immunology and chemotherapy that had been made during the late 1960's and early 1970's. It was a time when chances of successful treatment of cancer and related diseases such as aplastic anemia seemed to be getting better and better. But progress has not come fast enough and Teddy DeVita is caught in the middle.

His is an enormously complex difficult situation. There is, as far as is known, only one that parallels it. In Houston, Texas, there is a child, born with combined immunodeficiency disease, who has lived all of his life in a protective bubble while scientists try to find a way to get his bone marrow working. That child has long been referred to as "Baby David," but he is no baby any more. How long can someone stand to live in a bubble or a sterile room? No one knows. "Baby David," now about 5 years old, is too young to make a choice about it. But Teddy DeVita, mature beyond his 13 years, is which must make his young life even harder.

—BARBARA J. CULLITON

National Forests: Court Ruling Spurs Clear-Cutting Controversy

Congressional hearings in March opened the way for another noisy chapter in the continuing national controversy over timber management in the national forests. Pressures for congressional action stem from a federal appeals court decision last August that brought clear-cutting in the Monongahela National Forest to a grinding halt.

The decision confirmed a lower court ruling in favor of the Izaak Walton League and several other conservation organizations, which had sued to stop some proposed timber sales by the Forest Service. The sales were found to be in violation of the Organic Act of 1897, a long-ignored law that forbids the sale and cutting of immature trees. The findings in the case were subsequently applied in another suit over clear-cutting in the Tongass National Forest in southeastern Alaska.

The timber industry has been horrified by the decisions—it has been claimed that if they applied to national forests across the country, logging would be reduced by 40 percent. Now that the Organic Act, which was passed at a time when forests were being rapidly and heedlessly decimated, has been brought back to life, Congress is busily seeking ways to resolve the dilemma. And environmental groups are using the crisis to push what they believe are long overdue reforms in timber management in national forests.

The court, in the Monongahela decision, acknowledged that the Organic Act might be "an anachronism which no longer serves the public interest," and there is little disagreement that its proscriptions are much too crude to be appropriate in these days of modern silviculture. It prohibits the cutting of any but dead, matured, or large growth trees, which essentially means a prohibition against clear-cutting—a respectable technique when applied in moderation—since most stands contain some young trees.

The debate is not simply one between timber interests and lovers of wilderness, but also reflects very real differences among foresters on how to raise productivity without doing violence to other forest uses, and over the degree to which management practices should be spelled out in legislation. The differences are reflected in three pieces of proposed legislation that have been the subject of joint hearings held in mid-March by the Senate agriculture and interior committees.

One bill, introduced by the two Alaska senators, Mike Gravel and Ted Stevens, seeks to buy time for a solution by putting a 2-year moratorium on enforcement of the court decisions. Another, introduced by Hubert H. Humphrey (D–Minn.), contains a great deal of language about getting the Forest Service to promulgate new standards and guidelines, and contains a provision that would amend the offending portion of the Organic Act. The most controversial bill is S.2926, the National Forest Timber Reform Act of 1976, introduced in the Senate by Jennings Randolph (D–W.Va.) and in the House by George Brown (D–Calif.). This bill, if passed, would be the first major piece of legislation regulating timber management since the Multiple Use–Sustained Yield Act of 1960. That act seeks to ensure that timber growth keeps up with tree sales, and sets forth the principle that equal consideration be accorded to six forest uses: rangeland, wildlife, watershed, timber, recreation, and beauty.

The importance of the Randolph bill in the eyes of environmentalists may be indicated by the fact they have put together one of their single-purpose coalitions for the occasion, in this case the

Coalition to Save Our National Forests, representing a number of environmental lobbying organizations.

According to Thomas Barlow—who is taking time off from the Natural Resources Defense Fund to run the coalition—the purpose of the bill is to put into law basic management guidelines, some of which are already Forest Service policy, others of which are needed to bolster the service against what is perceived by environmentalists as a steady and perhaps unwitting slide into the lap of the timber industry.

The most visible feature of the bill is its restrictions on clear-cutting. None would be allowed in the eastern hardwood forests except for purposes of benefiting wildlife or salvaging damaged timber. In the West, where softwoods prevail, clear-cuts would be limited to 25 acres (the Forest Service is now generally trying to keep them under 40 acres but they are far larger in some places, particularly Alaska). The bill would supersede the Organic Act by permitting the cutting of immature trees where they are included in a stand of predominantly mature ones or for other purposes such as thinning or improving habitat.

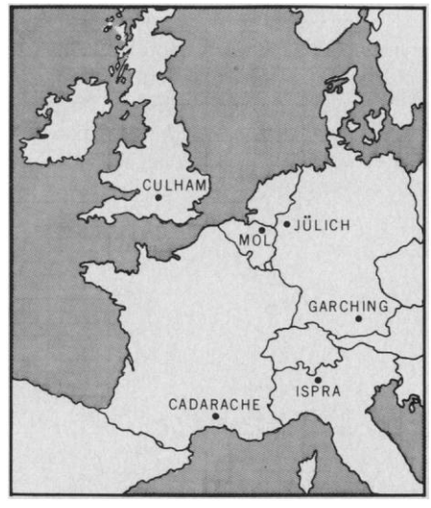
Also basic to restoring balanced management, in the minds of the Randolph bill's supporters, is making sure that both even-age and uneven-age practices are used. Even-age (which means cultivating a stand so that trees are all about the same age) predominates in the West and is closely associated with clear-cutting. The bill says no single system should predominate.

An implicit premise of the bill is that "multiple use–maximum sustainable

Science in the European Community: Deadlock on Fusion

Nine months ago, the science ministers of the European Economic Community (EEC) were supposed to decide on the future of a large project planned to be the keystone of fusion power development in Europe. Like similar Russian and American experiments, the Joint European Tokamak (JET) is intended to be a giant step in the direction of a magnetic vessel large enough to prove the principle of contained thermonuclear power. Many observers thought the European plan was the most versatile of the three, and last July, when the ministers were first due to act, it was moving on a schedule some months ahead of the American version, and several years ahead of the Soviets.

Not unexpectedly, the fusion project has run into political difficulties. In a time of recession and tight budgets, the nine common market (EEC) countries have been slow to commit funds for the project, but quick to argue the benefits of constructing the $200 million facility within their own borders. Disagreements over the choice of a site for JET have held up its authorization, thoroughly demoralized the 60-member team designing it, and raised the possibility that by the time the site and the money are available, there may be no one left to build it.



On 23 February, the science ministers deadlocked after long meetings, and put off the issue until their next meeting in June. A study by the EEC staff had recommended a site at Ispra in northern Italy, which now has EEC facilities (but no fusion research) and is underutilized. The British minister refused the recommendation, arguing for a site in the United Kingdom at Culham, where there is a long tradition of fusion research and where the international JET design team is now working. France and West Germany accepted neither proposal, but argued for sites on their own soil, at Cadarache in southeast France, and at Garching just outside Munich. Sites at Jülich, Germany, and Mol, Belgium, have also been proposed.

The scientists themselves would probably prefer the picturesque setting of Culham, only 50 minutes from London, to the rather remote facilities at Ispra. But what is endangering the project is that the EEC nations are unwilling to commit money before the site is decided.

The nine-nation dispute has nearly halted the design of the project, and has already caused some of the scientists to leave for more secure employment.

Although fusion machines are ultimately supposed to produce power, the experimental devices consume power, and the specifications of the regional power grids are different at each of the proposed sites. Depending on the details of its design, the JET machine will require up to 400 megawatts, but only a few of the sites have the nearly unlimited power necessary for certain economies of design. In part, the extended D-shaped cross section of the vessel, which makes it versatile, mandates the power requirement. More than anything else, uncertainty about the sort of power that will be available is holding up design work.

Uncertainty about the terms of employment of the professional staff, most of whom came from the strong national fusion programs in Britain, France, and Germany, is also becoming an acute problem. The original design team came to Culham on a 2-year contract that ended last December. Without project approval, no long-term contract could be offered to follow it, and about 15 percent of the scientists left rather than accept the 6-month extension under which the rest of the team is now working. If no decision on the future of JET has been made when that contract expires at the end of June, "the design team will dissolve and go back to their homes," according to J. P. Poffé, the head of the planning section.

The next meeting of the EEC ministers will leave very little leeway for negotiations. But if that meeting, planned for 18 June, fails, the question of JET will probably be thrown up to the heads of state, when they meet in July. The grand scale of the JET project makes it appear to be the sort of research for which regional cooperation is an ideal solution. But the results so far suggest that narrow-minded nationalism has hardly been overcome.—W.D.M.

yield" has become a frayed concept, stretched out of shape by pressures from industry. It seeks to ensure that maximum yield (and hence the amount of timber that should be cut) is calculated from the biological data and is not influenced by steadily rising timber demand. The Randolph bill, therefore, requires that multidisciplinary teams draw up a multiple use–maximum sustainable yield plan for each national forest. Sustainable yield would have to be calculated within areas of no more than 500,000 acres, rather than entire forests; this would result in "even flow," of timber, another cardinal principle of the bill, according to James Moorman of the Sierra Club Legal Defense Fund, who helped draft it. Instead of allowing an area to be cleared out and then leaving it for 50 years, he says, the bill would compel the Forest Service to arrange sales that produced smaller and more consistent cuts.

The timber industry has no use whatsoever for this bill. Representatives call it "forestry by prescription" that puts a "straitjacket" on the professionals. Many foresters and wildlife managers don't like it either, even though its intent, according to Moorman, is to put more power into the hands of Forest Service experts and insulate their judgments from pressures exerted by high-level bureaucrats and industry interests.

Supporters of the bill believe legislation is necessary to prevent large parts of the forests from being turned into short-rotation tree farms where huge stands of young even-age trees are harvested, like wheat, for pulp. The kind of forest the bill envisages is a "long rotation, high quality timber forest filled with large trees," where the concept of "multiple use" would be a reality and not degenerate into a meaningless euphemism (much as the call for a "balanced transportation system" became the rallying cry for highway builders).

To the industry and the Forest Service, however, the bill is a prescription for an inefficiently managed forest that is both unproductive and uncongenial to wildlife. They say it would inhibit the removal of old, static growth to make way for new, fast-growing stands, and they reject the bill's definition of physiological maturity, claiming it means a tree would actually have to be in a state of decline before it could be cut. They also predict the new restrictions would cause the annual amount of timber cut from National Forests to be reduced by up to 50 percent, and result in higher prices and increased unemployment. The National Forest Products Association went so far as to issue a press release warning residents of Los Angeles that they might have to lower their toilet paper consumption by 25 percent.

Tom Barlow says everyone has been over-reacting to this bill. He says, disingenuously in the minds of some, that the studies mandated in the bill might well cause allowable cuts to be increased. And if they do not, he believes the law would have the beneficial effect of causing timber companies to turn to privately owned land, thereby putting money in the farmers' pockets. As for the wood shortage that is projected if harvests are reduced, he observes that elimination of waste and cutting back on exports of logs from the Northwest to Japan ought to be looked into before anyone talks about shortages.

The term clear-cutting is often used as a shorthand for a variety of practices environmentalists don't like, such as inflated allowable cuts, short rotations, excessive use of pesticides, failure to regenerate cut areas, failure to remove slash (leftovers), and practices that lead to erosion and stream pollution. It is not the strident national issue it was 5 years ago, when rampant clear-cutting, particularly in Montana's Bitterroot National Forest, came under intensive scrutiny by a committee headed by Senator Frank Church (D–Idaho). The hearings resulted in the formulation of congressional guidelines that have stemmed many of the worst practices. Many foresters feel the Church guidelines are quite sufficient to protect the national forests from further abuse. But sustaining "multiple use" is becoming ever more of a challenge as these uses increasingly conflict and overlap. By the year 2020 demands for rangeland are expected to increase by 80 percent, recreational demand is expected to double; the Forest Service wants to double wilderness areas, and the timber companies want to haul out twice as many board feet. Pressures from commercial interests are bound to mount, and it may well be that guidelines and policies, however well-considered, will be no substitute for a little more inflexibility, in the form of a law.

—CONSTANCE HOLDEN

Biological Warfare: Suspicions of Soviet Activity

Has the Soviet Union taken a new interest in biological warfare? Two recent articles, quoting unidentified intelligence sources, suggest that the Russians are flouting the Biological Weapons Convention. Though evidence for an outright violation seems doubtful, there would be cause for concern even in a renewal of activity by the Soviet Union in an issue that had seemed to be well laid to rest.

The Biological Weapons Convention, which came into force a year ago, prohibits the development and production of offensive biological agents and requires existing stocks to be destroyed. Like certain other arms control treaties, the Convention is to some extent a cosmetic agreement to refrain from what neither side intended to do in any case. Biological agents simply make poor weapons. Nevertheless, the Convention appears somewhat more useful now than it did when first conceived, because it closes off the avenues opened up by the recently developed recombinant DNA technique.

The charges of violations by the Soviet Union appeared in articles in the Boston *Globe* of 28 September and in a Jack Anderson column of 27 December. The *Globe* piece was written by William Beecher, a former *New York Times* correspondent who became second-in-command of the Pentagon's public affairs office. According to Beecher, Administration officials "are in a quandary over what they can do about strong indications that the Soviet Union may be violating the ban on biological weapons by building new facilities for their manufacture and storage." The story quoted unnamed sources as saying that "there is evidence that within recent months the Soviet Union has been constructing or expanding facilities which appear to be