people to operate and maintain them. But U.S. population trends are working against the Navy, which must attract its recruits as volunteers; literacy levels in youth are not encouraging, and even today, after 6 weeks training, some young recruits are put on board ship barely able to read. Declining birth rates also mean that the pool of young people from which the Navy will have to draw in coming decades will be far smaller than in the recent past. The Navy is considering whether it can alleviate this problem by allowing women in more traditionally male jobs.

▶ *Gobbledygook*. Navy officers at the meeting and the War College keep talking about whether the Navy's mission should be "sea control" (protection of merchant marine and convoys) or "power projection" (attacks onshore), while some civilians griped that these terms are meaningless and probably obsolete. For instance, the carriers are designed to launch major attacks, that is, to "project power," and yet the main mission of their new fighter, the F14, is one of "sea control"; it is effective against the Soviet Backfire bomber whose probable job would be to attack merchant shipping. There are other examples, too, which show that Naval doctrine and lingo are not in step with the actual configuration of forces.

▶ *Being out of fashion*. Since taking office just over a year ago, the President's military policies have stressed improving the picture in Europe, where coordination between the United States and its allies had been neglected during the war in Vietnam. Representing the White House at the Newport meeting was Victor Utgoff, of the National Security Council staff, who told the audience that this interest in NATO did not imply anything glamorous or new for the Navy. "Emphasis in repairing the alliance would not seem to rest with building new ships," he told them; "It would take too long." Utgoff smilingly predicted that the high-level interest in NATO matters would pass once the situation had been improved. He thus implied that the White House thinks that the Navy's problems can stand to wait awhile before getting top-level attention.

▶ *The unknown future*. Participants at the meeting talked a lot about the Lewis and Clark expedition, the point being that the Navy has no more idea now of the threats it will face in the year 2000 than Lewis and Clark did when they readied for their journey up the Missouri in 1804. Thirty years ago, speakers noted, Israel barely existed, the People's Republic of China had not emerged, there had been no Middle East oil crisis, and most of the Third World was still colonized. But, typical of the range of disagreements at the meeting, some participants were more impressed than others by the lessons of Lewis and Clark. Some Navy officials argued that the range of unknowns means that the service needs maximum "flexibility," while others, primarily Jayne, the self-styled "black hat" from OMB, argued that the Navy must define its future mission more closely, including some things and ruling out others, despite these unknowns.

For all the talk of history and doctrine, however, the participants kept returning to the shipbuilding claims question, which will clearly dog the Navy's public image and its relations with the White House in the coming year. But for all the brave talk about what the Navy can do about this problem, participants rarely spoke about the man at the heart of it, Vice Admiral Hyman G. Rickover, the Navy's 77-year old nuclear propulsion guru, who, through his friends in Congress, controls other naval policies, including promotions. Some $2.4 billion of the $2.7 billion shipbuilding claims against the government stem from the nuclear program, and the industry seems to be preparing a case to the effect that their losses are all Rickover's fault; Rickover, meanwhile, has testified to Congress that the claims are "garbage."

Historically, the Navy bureaucracy has been rather inclined to settle the claims in order to get on with the job of building up the fleet to 400, 450, or 500 ships, but Rickover usually urges that the government not give the shipyards a dime. Ironically, at a time when the Navy has as many philosophical questions about its future as any time in the last 40 years, its immediate fortunes may be determined by the more earthy business of its relations with Rickover and with its shipyards.—DEBORAH SHAPLEY

Congressional Investigators Sniff Out Unused Federal Lab Space

When investigators on the staff of the House Appropriations Committee set out 5 years ago to survey and study research laboratories owned by the federal government, they were amazed to learn they were traveling in unmapped territory. No comprehensive list of laboratories, staff, and equipment existed. No list of unoccupied space in the laboratory buildings existed. No single federal agency, including the Office of Management and Budget (OMB) in the White House, had ever exercised oversight powers to insure that the labs were economically and efficiently run.

Recognizing an area that was ripe for closer supervision, the investigators recommended immediate homesteading either by OMB or the federal housekeeper, the General Services Administration (GSA). The suggestion was based in part on a finding that federal labs had been overbuilt, underused, and unnecessarily costly.

Normally, when one of the congressional appropriations committees states such a conclusion in strong language, someone somewhere in the city of Washington jumps. Late last year, tenacious committee investigators decided to find out who and how far. In what must have been a surprise, they found the 1974 situation essentially unchanged. And their report,* published recently, contains a scathing critique of every agency that was or should have been involved. In a city where officials pride themselves on understatement in judgments of one another, the language of the report stands out like a blast of fresh air in the summer smog.

Representative Jamie Whitten (D-Miss.), who is chairman of the appropriations subcommittee with jurisdiction over most federal research, introduced the report by noting that coordination and accountability within the bureaucracy for the 779 federal labs has been abysmal. As a result, 77 new research fa-

*Part 2, *Investigative Report on Utilization of Federal Laboratories, Hearings Before the Subcommittee on Agriculture and Related Agencies*, Committee on Appropriations, Government Printing Office, 1978.

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cilities are either under construction or being planned—providing 5 million square feet of space at a cost of more than $1 billion—at the same time that 4.5 million square feet of unoccupied space already exists in current facilities. No action was taken on the recommendations in the last report for cutting this apparent inefficiency, he noted.

The new report elaborates, revealing for example that the Defense Department is planning or building 31 new research facilities at a cost of $593 million, at the same time it has more than 1 million square feet of unoccupied space in existing facilities. The Department of Health, Education, and Welfare is more modest: it is planning or building 12 new facilities at a cost of $290 million, at the same time it has 564,000 square feet of unoccupied space in existing labs. Even more space, amounting to 2.5 million square feet, is available in laboratory buildings owned by the National Aeronautics and Space Administration, which has suffered budget cutbacks in recent years.

The report assumes, but does not prove, that a significant amount of the unoccupied space could be used as is or modified for use in place of the new construction. The investigators' primary objective was simply to produce the inventory and point out its potential value. Apparently, this was difficult enough by itself. "It was unimaginable . . . the depths within a department that one had to descend before any semblance of a listing of laboratories could be contrived," they report.

In addition to listing such information, the authors—under chapter headings such as "Department and Agency Inaction" and "An Exercise In Futility"—get down to the nitty gritty of who is at fault. Primarily, it turns out to be the GSA, which tried to set up an inventory of laboratory space but did it so poorly that only one-fifth of the laboratories in the earlier congressional study were included in the GSA list published 3 years later.

The reason that the agency missed so many labs, says the report, is that instead of using the congressional study as a starting point, GSA set up a task force to study how to formulate the inventory,

Briefing

NCI's Retrospective Look at Laetrile Seems Doomed to Fail

The laetrile movement is gaining momentum and with every pro-laetrile step forward, the National Cancer Institute (NCI) finds itself under increasing pressure to do something to affirm or persuasively refute persistent claims that laetrile fights cancer. It is estimated that 100,000 or more American cancer patients take laetrile, which has recently been legalized by several state legislatures. Yet, by all conventional scientific standards, it must be said there is no evidence that laetrile works.

It was in this milieu that NCI officials last fall began serious talks about conducting a clinical trial of the apricot-pit drug, in which some patients would receive laetrile, others a placebo. There is, at NCI, strong sentiment for going ahead with human tests of laetrile in the hope that doing so would put the issue to rest once and for all. But there is also strong opposition to testing laetrile on cancer patients on grounds that to do so would be unethical. One cannot ethically give a patient an agent that has not shown any anticancer effect in animal models, it is argued.

What to do? NCI officials came up with an imaginative scheme, a step removed from a real clinical trial, which they hoped would yield some information about whether laetrile has any biological activity in humans without putting the NCI itself in the position of actually giving the controversial agent to anyone. NCI decided to try to exploit what deputy director Guy R. Newell called a "kind of clinical trial going on in the community, one that we have an ethical responsibility to look at."

Last January Newell and other NCI leaders announced that they wanted to study, without prejudice, the case records of patients who had been taking laetrile and who believed their tumors had regressed as a result. Declaring that "Our minds are not already made up," while acknowledging the institute was responding to public pressure, Newell outlined the ground rules of NCI's proposal to examine the "clinical trial going on in the community."

It was a long shot, with the institute betting that it could find 200–300 individuals behaving in real life as if they were part of a scientific study. If NCI could find that number of patients in whom there could be shown some evidence that laetrile has "any biological activity," whether it cures cancer or not, the institute would be on firmer ethical ground if it decided to conduct a rigorous human trial of its own.

Since January, NCI has been seeking data on patients who have (i) confirmed pathological diagnosis of cancer, with slides to prove it and (ii) measurable disease—a palpable lump or tumor that is apparent in an x-ray, for instance. These patients may well have received some standard form of anticancer therapy—indeed, it is likely, inasmuch as they would probably have first been treated by a conventional physician in order to have had scientifically valid diagnoses of cancer. But, to be eligible for NCI's retrospective review, they would also have to have had a "documented" interval of 30 days or more during which they took *only* laetrile and after which their tumors either disappeared or shrunk. Through letters to physicians, articles in medical journals, and items in the general press, as well as pro-laetrile newsletters, NCI has been searching for these patients—people who gave up on standard therapy in favor of laetrile but who have also kept in touch with their regular physicians, the ones NCI is hoping will have the necessary proof that something positive happened to their laetrile-taking patients.

No matter what happened with a retrospective study of this sort, one would never get definitive data, but in order to get any useful information at all, it is essential to get the records of those 200–300 cancer patients. Almost three months ago, NCI officials optimistically predicted that getting patients to volunteer their records would be no problem, though the foundation for that optimism was shaky.

Now, it looks as if the whole compromise scheme is going to fail. Instead of having records from 200–300 patients, NCI has heard from only 45 or 50 and, according to Neil Ellison, who is handling the project, not all of them meet the criteria. For example, he noted that in some cases there was no adequate proof that the person actually had cancer and in others, the record showed that the patient was already in remission as a result of standard therapy before taking laetrile.

At this stage, it is not clear what NCI will do next. The pressure for an NCI-sponsored clinical trial continues, and it looks as if the institute is going to have to make the hard go–no go decision without relying on the false comfort that its retrospective analysis was meant to give.

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and waited 2 years to begin. Ultimately, the agency's officials decided to restrict the inventory reports of unoccupied space to lots of 10,000 square feet or more. Also, only laboratories operated by the federal government were required to respond (many labs are owned by the federal government but operated under contract). When the report form was finally devised, it was watered down enough to create "further havoc on what was destined to become a diluted and meaningless inventory" according to the subcommittee. "Succinctly stated, the GSA reaction was 'a day late and a dollar short.' "

Wallace McCoy, the assistant to the assistant commissioner for space management at GSA, contests the charge. "We limited the report requirements to large blocks of space because we perceived those to be the most valuable for one agency to borrow from another," he said. "Also, labs operated under contract from the federal government are more difficult to transfer from one agency to another."

However good or bad, once the form was sent out, other agencies had an opportunity to share in the debacle. "The Department of Defense, for all intents and purposes, was totally unresponsive," the subcommittee report states. NASA submitted 15 forms, but GSA claimed it received only six. Neither agency made any attempt to find the missing ones. The Department of Energy submitted inventory forms on only 8 of its 41 laboratories, and, when confronted by the subcommittee investigators, acknowledged that it had not been totally responsive. The Department of Agriculture was one of the few that complied with the GSA requirement on deadline, according to the subcommittee report, "but this can hardly be considered an accomplishment." The submitted forms reflected only 30 percent of the department's laboratories. HEW also submitted inaccurate totals, claiming later that it had never understood the requirements in the first place.

The subcommittee report attributes part of the inaccuracy to a reluctance by several of the agencies to report unoccupied space. "Coincidental or not, when figures pertaining to 6 U.S. Army facili-

Briefing

March of Dimes Denies Giving In to Antiabortionists

For several years, antiabortion forces have been trying to convince people not to contribute to The National Foundation—March of Dimes because of its support of "genetic services programs" through which pregnant women may have amniocentesis. Amniocentesis, as far as "right-to-life" groups are concerned, is the next best thing to abortion because if the procedure reveals a defective fetus, it is more than likely that the mother will opt to abort. Antiabortionists are unimpressed by arguments that in 97 percent of cases, amniocentesis reassures women that the fetus is healthy and the mother carries it to term.

Opponents of The National Foundation have not been successful in hampering fund raising (contributions more than doubled from $25 million in 1970 to more than $57 million in 1977), but they are this year claiming a victory of sorts because the foundation is reducing its support of some of its genetic services programs. (There will be no reduction in its support of basic research in genetics.) Foundation officials, who insist that a number of 5-year projects are merely coming to a natural end, are so concerned about appearing to have given in that they have sent statements explaining their case to March of Dimes staff and volunteers, as well as to the press. ". . . contrary to what you may have heard, we are neither terminating our support of genetics programs nor submitting to pressures by antiabortion forces to alter our policies and programs," Foundation president Charles L. Massey says. In fact, in 1979, the Foundation will continue to support 80 genetic services programs to the tune of $2.3 million and is accepting applications for new ones.

MIT Scientist to Head FDA's Bureau of Foods

When Donald Kennedy became commissioner of the Food and Drug Administration (FDA) a year ago, he declared that one of his principal ambitions was to attract first class scientific talent to the agency to belie its reputation as a place where no imaginative researcher would want to work. In hiring Sanford Arthur Miller, professor of nutritional biochemistry at the Massachusetts Institute of Technology (MIT), to head FDA's bureau of foods, Kennedy seems to have taken a step in the direction of remaking the agency's image.

Miller, who has been at MIT since 1959, enjoys a reputation as one of the country's leading nutrition researchers. His areas of specialization include the interaction between nutrition and development in the infant (including the effects of food additives) and oral biology (including the relationship of diet and vitamins in the etiology of periodontal disease).

In a telephone interview with *Science* Miller discussed his reasons for taking the FDA job, prominent among them the fact he'd be working with Kennedy whom he calls "the single most impressive person I've met in 20 years of dealing with the federal establishment." "I suppose," he said, "I should say that I come screaming all the way, but really I'm just interested." In a number of ways, Miller's associates and MIT as an institution pushed him to go to FDA. "For 20 years, I've been firing off polemics against the FDA," Miller said. "One of my colleagues told me it was time to 'put up or shut up.' And one of my students said that the American people had been supporting me for 20 years while I had a good time. Service at FDA gives me a chance to repay that." And, less philosophically, Miller added, "I also have reached the right stage in my career for a move like this. I guess I have the 20-year itch."

Miller also credits MIT with his decision to accept. MIT which, he says, "has a long tradition of supporting this kind of thing," has granted him a 3-year leave of absence. On the one hand, this reduces the risk he takes—if he and FDA do not seem fit for each other he can just return to Cambridge. On the other, it puts him in a position to speak out without having to worry about his rise up any bureaucratic ladder.

And Miller promises to speak out, even if it means locking horns against his outspoken boss. But suddenly about to become an insider, he is reluctant to comment on particular issues. "Around here I always say, 'Never quote me tomorrow on what I said today,' " Miller quipped, while acknowledging that in a federal agency, where decisions are "quickly engraved in sandstone, if not in granite," one has an obligation not to shoot from the hip.

—Barbara J. Culliton

ties were questioned, it came to light that 4 of the facilities contained over 186,000 square feet of unoccupied space which had not been initially reported," the authors state. Also, "the FDA did not report and GSA failed to detect the existence of over 450,000 square feet of unoccupied space at the National Center for Toxicological Research at Pine Bluff, Arkansas." Despite these major discoveries, the investigators felt that a great deal of additional unoccupied or underused space remained unreported.

Properly, GSA cannot be blamed for all of these problems, according to the report and to one Administration official. For one thing, GSA has a reputation above which it cannot seem to rise. "They're thought of as real estate managers and the providers of routine services," the official said. "Not many agencies feel that GSA is qualified to determine the best uses of technical scientific buildings." Officials at NASA in particular express the belief that GSA is not adept at finding the best use for technical facilities.

Fear of Forced Relocation

Also, according to one official, there is a more general fear that if an agency reported its available laboratory space, it would wind up surrendering control of the space, and possibly be required to move its employees great distances for the sake of consolidation. "If there is a solid technical reason, the professionals will probably accept a move," the official said. "But if the move is just because unoccupied space exists in another lab, and the lab is in another city, many of the competent people might drop out in order to stay in the same place." The official added that many departments also would rather have new research facilities than be required to modify old ones.

The congressional investigators felt that agency concern about disclosing unoccupied laboratory space could be allayed if the Federal Coordinating Council for Science, Engineering, and Technology assumed the responsibility for surveying and managing it. William Raney, a senior policy analyst in the White House Office of Science and Technology Policy and executive secretary to the Council, told *Science* that the Council would consider this sometime this year.

As for the GSA, it determined as a result of its inventory that a large volume of unoccupied space did not exist—despite the congressional findings that the space has increased by 70 percent—and on 19 January canceled its entire inventory program.—R. JEFFREY SMITH

APPOINTMENTS

Norman J. Doorenbos, professor of pharmacy, University of Mississippi, to dean, College of Science, Southern Illinois University. . . . **Richard J. Goss**, chairman of developmental biology, Brown University, to dean of biological sciences at the university. . . . **David J. Gocke**, professor of medicine and microbiology, College of Medicine and Dentistry of New Jersey, to dean of the medical school at the college. . . . **David B. Hershenson**, chairman of psychology, Illinois Institute of Technology, to dean, College of Allied Health Professions, Boston University. . . . **F. Aloysius Wood**, professor of plant pathology, University of Minnesota, to dean of research, Institute of Food and Agricultural Sciences, University of Florida. . . . **Oscar Gawron**, professor of chemistry, Duquesne University, to dean, Graduate School at the university. . . . **John T. Vaughan**, chairman of large animal surgery and medicine, Auburn University, to dean, School of Veterinary Medicine at the university. . . . **W. Ann Reynolds**, professor of anatomy, University of Illinois Medical Center, to dean, Graduate College at the university. . . . **Henry H. Roenigk, Jr.**, assistant professor of medicine, Case Western Reserve University, to chairman of dermatology, Northwestern University Medical School. . . . **Bruce W. Calnek**, acting chairman of avian and aquatic animal medicine, College of Veterinary Medicine, Cornell University, to chairman of avian and aquatic animal medicine. . . . **William R. Drucker**, dean, University of Virginia School of Medicine, to chairman of surgery, University of Rochester Medical Center. . . . **Paul L. La Celle**, professor of medicine and radiation biology and biophysics, University of Rochester Medical Center, to chairman of radiation biology and biophysics at the university. . . . **Tag E. Mansour**, acting chairman of pharmacology, Stanford University School of Medicine, to chairman of pharmacology. . . . **Gregory A. Davis**, professor of geological sciences, University of Southern California, to chairman of geological sciences at the university. . . . **Ian W. Shepherd**, senior lecturer in physics, Manchester University, to chairman of physics, Michigan Technological University. . . . **Jacques Zakin**, professor of chemical engineering, University of Missouri, Rolla, to chairman of chemical engineering, Ohio State University. . . . **Wesley D. Anderson**, professor of veterinary anatomy, University of Saskatchewan, to chairman of veterinary anatomy, Ohio State University. . . . **Frank Parker**, professor of dermatology, University of Washington, to chairman of dermatology, University of Oregon Health Sciences Center. . . . **Joshua A. Fierer**, professor of pathology, Creighton University, to chairman of pathology, University of Illinois Medical Center. . . . **James S. Meditch**, chairman of electrical engineering, University of California, Irvine, to chairman of electrical engineering, University of Washington. . . . **A. John Christoforidis**, clinical professor of radiology, Ohio State University, to chairman of radiology, Medical College of Ohio. . . . **William Rife**, chairman of humanities, North Central College, to chairman of chemistry, California Polytechnic State University, San Luis Obispo. . . . **Nicholas L. Rohrman**, associate professor of psychology, Florida State University, to chairman of psychology, Colby College. . . . **Martyn E. Richardson**, pediatrician, St. Louis, to chairman of pediatrics, West Virginia School of Osteopathic Medicine. . . . **Sachchida N. Sinha**, associate professor of pediatrics, University of Illinois Medical Center, to chairman of pediatrics at the university. . . . **James Wei**, professor of chemical engineering, University of Delaware, to chairman of chemical engineering, Massachusetts Institute of Technology.

Erratum: In the review of *The Solar Output and Its Variation* (page 1429, 31 March 1978 issue), the editor's name is omitted. The editor is Oran R. White.

Erratum: The correct legend for the cover of the 31 March 1978 issue of *Science* is as follows: Hindfoot prints of a 6-hydroxydopamine–treated rat. Although typically akinetic when it is induced to walk by atropine, the rat's gait is characterized by short steps that may be analogous to that of some Parkinson patients. Here the rat has just been placed on the ground, where it first assumed a broad base of support with the hind legs, then brought its feet closer together and walked forward. [Timothy Schallert, University of Illinois at Urbana–Champaign, Champaign]