

The agencies put their recommendations into two complementary reports. The AEC's recommendations center on supplementation of its reactor development program to provide economic nuclear energy sources for anticipated intermediate and large-scale needs. Expenditures of an extra \$147.5 million for studies and R&D and \$73 million for prototype assistance are recommended for the years through fiscal year 1975.

In summary, the Interior report recommends these actions.

"(1) That the Anderson-Aspinall Act be extended through 1972, the monetary authority increased by \$200 million, and the Department's authority to build experimental facilities clarified. We will request specific Congressional authority to assist in the construction of prototype plants at the appropriate times.

"(2) That we establish a West Coast test facility where modules and full-size components of distillation plants can be tested under sea-water conditions applicable to prototype plants.

"(3) That we have construction started on at least one intermediate-size prototype plant in 1967. Prior to that time, an accelerated effort ranging from basic research to conceptual design, using the most creative minds in the country, will be conducted on the distillation processes.

"(4) That we undertake an immediate and comprehensive study of all phases of comparative water costs and needs.

"(5) That we sharply increase the basic research effort to discover entirely new desalting techniques, to develop the promising reverse-osmosis process, and to perfect the distillation processes."

It appears that the "intermediate-size prototype plant" mentioned in the recommendations would be built on the West Coast and would almost certainly be a distillation plant. A large dual-purpose plant is also under serious consideration by the Metropolitan Water District of Southern California. In August, Interior and Metropolitan entered into a contract to undertake a feasibility study of a plant which could produce between 50 and 150 million gallons of water a day and 150 to 750 megawatts. The study, financed jointly by OSW, the AEC, and Metropolitan, is being made by a private concern and is scheduled for completion in October. Such a plant might be built

by 1970. The OSW has also let design contracts with six firms for plans to build a dual plant in the 50-million-gallons-a-day range by 1970.

A study for a small dual-purpose plant, providing a million gallons of water a day and 2500 kilowatts of electricity, is planned for Long Island, and activity in several other water-short areas may result in similar studies.

The United States has also signed a bilateral agreement with Israel under which an American firm is conducting technical studies for a proposed intermediate-sized dual-purpose plant to serve Israel's demands for more water for industry and municipal use and to improve the quality of present water supplies and help meet irrigation needs.

There are no U.S. security wraps on desalting technology, and the United States and the Soviet Union last year signed an agreement on exchange of information on desalting. This has resulted so far in an exchange of visits by experts from the two countries, and of some information.

The Americans who visited the Soviet Union say the Russians have a vigorous desalting program in progress. But the visitors' reaction to a show-piece pilot desalting plant seems to have been that it was "goldplated"—that is, the materials and methods employed indicated that cost was no object.

Cost is the key in the American program, but it is impossible to speculate on the future of desalting without a whirl through the wonderland of water economics. The main point to grasp is that the price of water often bears little close relation to its real cost.

In the West, it is estimated, the cost of water for irrigation in some places is six or seven times its price to users. Water for municipal and industrial use is usually subsidized—if the costs of developing water reserves, of transportation, and of distribution are taken into account.

Of course, there are plenty of reasons—good and bad—for subsidizing water, but the Interior Department's recommendation that a comprehensive study be made of comparative water costs makes eminently good sense now, as it becomes increasingly necessary to make hard decisions on alternative uses of water.

The scaling up of desalting plants to "large" (over 50 million gallons a day) and "very large" (half a billion

gallons and up) involves not only serious scientific and technical problems but political difficulties as well.

Water supplies are usually municipally operated, but electric power is provided under a mixed public-private system. It is likely that, as desalting operations grow bigger and more efficient, time will bring battles reminiscent of those fought over TVA and, more recently, over the use of steam from the AEC's Hanford, Washington, reactors for power production.

The OSW, a small (still under 100 employees), research-supporting agency is, therefore, moving into a more complicated future. In January the agency got a new director, Frank C. Di Luzio, 51, who brings to the job a background as an engineer and research administrator in the Interior Department, the AEC, and industry. Most recently Di Luzio served as staff director of the Senate Aeronautical and Space Sciences Committee, of which Anderson is chairman, and Di Luzio's switch to OSW, which is "taking off" into a higher level of activity, cannot be regarded as sheer happenstance.

Di Luzio's experience on Capitol Hill should stand the agency in good stead, although the desalting program appears to have no real enemies in a Congress that is showing clear signs of understanding that the nation faces serious problems of quantity and quality with its water supply.

Prospects for the water desalination program, then, look promising from both the technical and the political viewpoints, and one by-product of the program in the years just ahead may be a serious examination of our unrealistic pricing policy on water.

—JOHN WALSH

Quackery: Senate Investigators Concerned with Billion-Dollar Business Preying on Elderly

The elderly are by no means the only Americans bilked by quack promoters, but a disproportionate share of the \$1 billion this country annually spends on phony medical remedies is contributed by the people over 65, who are statistically least able to afford it. The particular vulnerability of the aged to medical and other pitchmen led the Senate Special Committee on Aging to establish a subcommittee to investigate. The subcommittee, headed by Harrison

Williams, Jr. (D-N.J.), held extensive hearings and recently published a report* that is a dispiriting picture of human chicanery. But instead of just shaking its head and concluding that the quacks will always be with us, the committee has made several recommendations that may go some distance toward putting them out of business. Two of these deserve particular attention.

The first major recommendation calls for the establishment of a single government antiquackery bureau within the Department of Health, Education, and Welfare. The government's power to move against the quacks is now divided among three agencies: the Food and Drug Administration has jurisdiction over misleading product labeling; the Federal Trade Commission, over deceptive advertising; and the Post Office, over mail frauds. Since many hucksters inevitably utilize all three techniques for deception, such separation is illogical; and since coordination between federal agencies is not always what it should be, separation is inefficient as well. A single bureau of the kind proposed would not end the divided authority but it would supplement the actions of the three other units and give some sense of coherence to the government's enforcement activities.

The committee's second major recommendation is that the medical devices that are so lucrative for the quacks be subjected to regular premarket screening by the Food and Drug Administration. A similar proposal was made by President Johnson in his health message to Congress in January. Essentially it calls for applying to therapeutic devices the same tests of safety and effectiveness that are now in force for drugs. These devices include thousands of respectable pieces of equipment that are essential to modern medicine and surgery. But they also include an array of entirely fraudulent gadgets. One of these, for example, is the Auto-Electronic Radioclast, supposed to detect diseased organs; this, the subcommittee reports, is "actually nothing more than a wooden cabinet containing a combination of electronic circuits, pilot lights and dials operated by a practitioner allegedly trained to interpret its mysteries." Another is the Micro-Dy-

nameter, supposed to diagnose an assortment of diseases by "measuring minute electrical currents generated when metal attachments were applied to the skin of the patients." In 1963 the FDA discovered that the machine in fact measured only the amount of perspiration on the skin, and it rounded up about 1200 of them, many of them in use by what the committee referred to as "licensed practitioners." But the machines had sold for \$875 each, and treatment was estimated to have cost the patients \$25 to \$50 million. There are dozens of other such gadgets, at least as costly and fraudulent.

The immediate prospects for action on the subcommittee's proposal are extremely slim, for despite its endorsement by President Johnson, no one seems to be paying much attention at the moment. In addition, the regulation proposed is extremely delicate and likely to be the focus of extended controversy when it finally does receive congressional attention. The major problems will be to find a formula that eliminates the quacks without unnecessarily harassing the respectable manufacturers, and to avoid putting cumbersome restrictions on production of the thousands of simple devices, from adhesive bandages to surgical tools, that are generally recognized as useful and safe.

Presumption of Innocence

Underlying the government's present difficulties in dealing with the quacks is a situation stressed repeatedly in the hearings, the astonishing weakness of present laws. The quacks are a major beneficiary of the presumption of innocence that characterizes our legal system, and no one would take this protection away from them. But the system does have some unfortunate side effects—chiefly, that the agencies cannot usually curb the business operations of the accused while a case is pending either administratively or in the courts. Anything can be sold while the government takes the time and manpower to accumulate detailed evidence. In California, for example, according to the subcommittee, "investigators and attorneys worked for two years to prepare evidence needed to proceed against a device that, in the name of therapy, actually generated gases harmful to humans."

The result of this regulatory lag is that many a crook has continued fleecing the public (and salting away great

sums) while the government has been compiling its case. Frederick Stare, chairman of the Department of Nutrition of Harvard's School of Public Health, described a fairly typical case for the subcommittee. The item in question was a book Stare described as "filled with misstatements, with falsehoods, and with all kinds of errors and implications." "I don't know how long it has been available," Stare told the committee, "my guess would be at least 5 years. Well, the Federal Trade Commission got after the publisher [for deceptive advertising] and asked if I would be a witness for them, and I said that I would be. This case was to come to trial four or five times, and then at the last minute it would be postponed.

"This past fall," Stare continued, "just the day before it was to finally come to trial in New York, as usually happens, they throw in the sponge and say 'The Federal Trade Commission was right,' and they quit. But in the meantime, they have had a few years to sell this book and get all this nonsense around to the American public. Also during this stalling they have time to write a similar book, giving the same old nonsense, bringing it up to date, and coming out with it about the time they throw in the sponge on the former book. This has happened—same author, same publisher, only a different title. So here they go again for a few years while the FTC prepares a new case."

The pattern noted by Stare is a favorite not only of the quacks with literary ambitions but of those who purvey phony medicines and devices as well, and no remedy proposed by the committee or by anyone else would actually have much effect on it. It is hoped, however, that if the government is empowered to inspect at least some of the fraudulent materials before they can be sold, the number of fields for lucrative quackery will at least be reduced somewhat.—ELINOR LANGER

Announcements

A Center for Crystallographic Research is being established in Buffalo, New York. It is supported financially by the Roswell Park Division of Health Research, Inc., an organization created to administer grants in support of scientific research at the Roswell Park Memorial Institute. The Center's personnel

* The report, "Frauds and Deceptions Affecting the Elderly," together with the hearings on which it is based, are available from the Government Printing Office, Washington, D.C. 20402 for \$1.90. The hearings are entitled "Health Frauds and Quackery."