with the Labor and Health, Education, and Welfare Appropriations subcommittee, chaired by Representative John Fogarty (D–R.I.). The NIH hearings and report*, both released a few weeks ago, are saturated with Fogarty's berating of NIH and the administration for not seeking more money. In the present fiscal year, NIH received an appropriation of $1.058 billion. For the coming year the administration requested $1.146 billion. Describing the request as "seriously deficient," Fogarty's subcommittee added $11.7 million to the administration figure. Fogarty's counterpart in the Senate, Lister Hill (D–Ala.), will probably recommend an even larger addition.

Under prodding from Fogarty, NIH officials conceded that it was their professional judgment that a good deal more money could be used for research and training, but they explained that they were required to work under a budgetary ceiling set by the administration. Fogarty declared that the new budget was inadequate to absorb increased costs, let alone provide for expansion of NIH's programs. NIH director James Shannon sadly agreed, but pointed out discreetly that he wasn't a free agent when it came to making the budget. In questioning Kenneth M. Endicott, director of the National Cancer Institute, Fogarty demanded, "Do you mean to say you can't do any more than you are doing now, if you had the funds and personnel and facilities?"

Endicott replied, "No, sir, I hope I didn't convey that," and he added, "If one could forget all about the budgets and so on—." To which Fogarty responded, "Forget it. Say to yourself, 'The sky is the limit'; now let us go and see what kind of a program we really should have."

To a large extent, the differences in congressional treatment of NSF and NIH can be attributed to the popular appeal of medical research and the general lack of understanding of the significance of nondirected basic research. But there is also an element of luck in the picture.

The vagaries of congressional seniority and committee assignments brought John Fogarty and Albert Thomas to their respective chairmanships, and though both chairmen in many ways reflect the general public's attitude toward research, it is clear that their own tastes and personalities have had a great deal to do with the fortunes of the agencies under their jurisdictions. After all, NSF is yet to be told by its fiscal judge that it should consider "the sky the limit."—D. S. GREENBERG

* Labor and HEW Appropriations for 1966, part 3, hearings, available from Appropriations Committee, U.S. House of Representatives, Washington, D.C. 20515. (The report is available from Document Room, U.S. House of Representatives, Washington, D.C. 20515.)

Heart, Cancer, and Stroke: Bill Based on Presidential Commission Calls for Regional Medical Centers

The Heart Disease, Cancer, and Stroke Amendments of 1965, an administration-backed bill now under consideration by Congress, is one of those cases where the name is the same but the substance has been changed sufficiently to provide the unwary with a few surprises. The bill is the only concrete legislative proposal to emerge from the wide-ranging report of the President's Commission on Heart Disease, Cancer, and Stroke (*Science*, 20 March and 25 December 1964). Its lineage is attested by its name and by the fact that it has the explicit backing of several of the most prominent members of the commission, including its chairman, the noted Texas surgeon Michael DeBakey. In many ways, however, the bill and the report differ markedly, not only because the bill reflects only a portion of the commission's recommendations but because, even in the recommendations that have been incorporated, important changes of emphasis have emerged. The confusion between the two seems to have contributed to a near-blackout of serious discussion of a program which stands a good chance of being endorsed by Congress, and which is likely to have a significant effect both on the structure of medical service throughout the country and on the health activities of the federal government.

In many ways the original DeBakey report was an exceedingly diffuse document. Volume 1—the commission's conclusions and recommendations, issued last December—consisted of over 100 pages and dozens of recommendations on topics ranging from the payment of overhead costs on research grants to improved facilities for animal laboratories. Volume 2, a 650-page supplement published late last month, consists of the working papers and reports of the commission's eight subcommittees and contains everything from scientific papers on cancer to original studies of medical manpower and facilities. Within the welter of words two main themes could be distinguished. On the one hand, the commission proposed strengthening all existing resources which contribute ultimately to improved medical care, from community health programs to research facilities. These proposals entail expansion of existing government programs rather than the development of new ones. Secondly, the commission proposed creation of an entirely new system, what it called a "national network" of regional centers, local diagnostic and treatment stations, and medical complexes with the specific purpose of insuring that discoveries made in the nation's major medical centers would rapidly find their way into the treatment of patients throughout the country. This was the proposal that was the answer to President Johnson's charge to the commission to "do something" about the alarming death tolls from the three diseases. And this was the proposal that Chairman DeBakey described as the "major innovative thrust" of the commission's recommendations.

As pictured by the commission, the national network was to consist of 60 regional centers oriented toward clinical research and located in universities, hospitals, and research institutions, and more than 450 diagnostic and treatment stations linked with the regional centers but serving physicians and patients located in more remote communities. As a supporting measure the commission advocated that grants be given to "stimulate the formation of medical complexes whereby university medical schools, hospitals and other health care and research agencies and institutions work in concert." But the heart of the proposal was its call for independent categorical research and treatment units.

In the bill before Congress, the commission's emphasis appears to have been reversed. Its formal purposes are (i) "Through grants, to encourage and assist in the establishment of regionally coordinated arrangements among medical schools, research institutions, and hospitals for research and training and for demonstrations of patient care in the fields of heart disease, cancer, stroke, and other major diseases"; and (ii) "to afford to the medical profession and the medical institutions of the Nation, through such coordinated arrangements, the opportunity of making

available to their patients the latest advances in the diagnosis and treatment of these diseases." The regional centers and diagnostic stations are still to be brought into existence, but it appears that they will operate with, and be subordinate to, the newly conceived entity known as a "regional medical complex." And the complex, which is to be centered around a medical school, will include not only the new units but a wide variety of existing community health agencies. The medical schools will not necessarily have to supervise the complex directly: some new administrative agency reflecting the new institution as a whole, or an agency of the state, could conceivably do that. But the cooperation of the medical schools is required, and it is plain that they will be expected to take some responsibility for the quality of medical service in all outposts of the complex, not just within their own precincts.

Three changes between the report of the commission and the administration bill are particularly worthy of note. The first is the shift from provision for the actual treatment of patients afflicted with specific diseases to a concern with the organizational and intellectual climate affecting the medical profession as a whole. Both concerns were present in the report and remain evident in the bill, but the relative weight given them has shifted markedly. A second change is the inclusion of "other major diseases" in a program initially designed as a categorical approach to particular diseases. Finally, there is a somewhat paradoxical localism. While the centers and stations advocated by the commission would probably have developed close ties with other health agencies in their communities, they were conceived of, to a certain extent, as federal installations: that was the meaning of the concept of a "national network." Under the arrangements proposed by the bill, on the other hand, the major job of the federal government would be to pay the bills. In drawing up regulations, and in evaluating applications for grants, the federal government would obviously have a chance to exert considerable influence on the development of the complexes. But both the initiative for the complexes and their actual administration would rest with the regional units.

The influences leading to alterations in the commission's recommendations appear to have been varied. One influence, rather oddly, appears to have been the enthusiasm for local cooperation which characterizes many programs of the Great Society. In both the poverty program and the new education bill, certain federal grants are conditional on the ability of sometimes competing local interests to join together and come up with a unified plan. In the medical-complex program the same impulse is at work, producing a shift from the more autonomous units suggested by the DeBakey report to the coordinated system implied by the bill. The grants may go to individual entities (universities, medical schools, research institutions, health agencies), but only if a plan for coordination among the entities sufficient to justify the name "regional complex" is certified by a local advisory group. The bill prescribes that the advisory group is to consist of "representatives of organizations, institutions, and agencies concerned with activities of the kind to be carried on by the complex and members of the public familiar with the need for services provided by the complex."

Edward W. Dempsey

To a certain extent the differences between the bill and the report also appear to reflect divisions within the commission itself. The sense of institutional loyalty aroused by the commission is rather strong, and there have been relatively few public pronouncements on the subject of internal schisms. But from private conversations it is apparent that, although all members of the commission concurred in the proposal for the categorical research and treatment units, this approach was particularly congenial to the individuals already engaged in categorical studies. The so-called "categoricalists" had a good deal of influence within the commission, in part simply because of the way its work was defined by President Johnson, in part because they included some exceedingly prominent cancer, heart, and stroke specialists. Other members, whose professional experience lay, for example, in medical administration, tended to favor a more unified approach, emphasizing that broad expansion of medical manpower and facilities was needed to underpin any major new programs against particular diseases.

Just when the balance shifted between the "categoricalists" and the "generalists" is by no means clear. But an important factor was the role of Dr. Edward W. Dempsey, former dean of the School of Medicine of Washington University, in St. Louis. Dempsey, who was a key member of the commission and chairman of its subcommittee on manpower, resigned in September 1964 to succeed Boisfeuillet Jones as special assistant to the Secretary of Health, Education, and Welfare for health and medical affairs. "When the report was finally finished," one HEW official commented, "DeBakey went back to Texas, Sidney Farber [director of research, Children's Cancer Research Foundation] went back to Boston, Helen Taussig [emeritus professor of pediatrics, Johns Hopkins] went back to Baltimore, and Philip Handler [chairman, department of biochemistry, Duke University Medical Center] went back to North Carolina. Everybody went away. But Dempsey stayed here, and the bill was drafted in his office. It's hardly surprising that his views can be discerned in it."

If the influences affecting the shape of the bill are somewhat vague, the implications of its contents are even vaguer. In part this appears to be because of the Johnsonian speed with which the legislation was written and introduced: the commission reported in December; the bill was introduced in January; and not even the sympathetic hearings held in February by Senator Lister Hill (D–Ala.), chairman of the health subcommittee of the Senate Labor and Public Welfare Committee, could dispel the feeling that even the administration was a little

confused about how its program would function and what its consequences would be. A central uncertainty is the question of cost: the bill would allocate $50 million for the fiscal year ending 30 June 1966. But for each of the next four fiscal years it recommends only "such sums as may be necessary" —a formula which could conceivably pass the Senate but is unlikely to be approved by the House.

More important than the question of cost is the question of organization and operation. Under the bill the medical complexes would come under the jurisdiction of the Surgeon General of the Public Health Service, who would supervise them with the aid of a National Advisory Council on Medical Complexes with functions and responsibilities similar to those of the advisory committees of the National Institutes of Health. But the bill neglected to spell out which branch of the Public Health Service (PHS) would run the program—an omission which both opened the Pandora's box of departmental politics and cast further doubt on the clarity of the administration's conception of its plan. Although the decision has not yet been publicly announced, it now appears certain that the program will be run by the research arm of the Public Health Service, the National Institutes of Health. The choice is alleged to have been based on the argument that NIH already has extensive experience running clinical research programs throughout the country. In fact, however, NIH's experience along these lines is actually rather modest. It consists chiefly of a 5-year-old program of support for small general research units (mainly in hospitals and medical schools) and a number of additional clinical units run by the individual institutes. The total number of such units seems to be well under 200, many of them consisting of fewer than a dozen beds. The NIH also runs a much larger clinical center on its campus in Bethesda, Maryland. This experience is by no means to be discounted. But the "downtown" branch of the Public Health Service has experience that might be considered equally relevant, both in the actual operation of hospitals and in working with state and local health officers on various community health programs. A more important factor than "experience" in dictating the choice of NIH appears to have been the distrust of the downtown PHS that is endemic in Washington science circles, a distrust shared by influential politicians and by many outside representatives of the scientific and medical communities. Government officials involved with the decision concede privately that an internal PHS recommendation that the program be supervised by a new grouping within the office of the Surgeon General and representing all segments of the PHS was shelved because of what they describe as "political pressures."

Effect on NIH

The choice of NIH to run the regional-complex program is likely to have important consequences. In the first place the categorical structure of the institutes themselves is apt to reinforce the categorical aspect of the medical complexes that seems to be played down in the legislation. Secondly, it is reasonable to suppose that NIH's overwhelming interest in research will have some effect on the balance between research and service that the new program develops. And, thirdly, the new assignment will come at a time when the health activities of the Department of Health, Education, and Welfare are in something of a state of flux. NIH is studying itself—and being scrutinized by others—in the light of the conclusions of the Wooldridge report (*Science*, 26 March and 16 April); the Department as a whole is preparing itself for a thorough investigation by the House Commerce Committee (*Science*, 30 April); and a bill is also under consideration which would encourage a reshuffling of the Department's structure by providing it with three new assistant secretaries. Thus the assignment to NIH of responsibility for the medical-complex program could conceivably become the occasion not only for a redefinition of the roles of various branches of the Department but also for a reorientation of NIH's previously dominant concern for research. "We've had something of a tail-wagging-dog problem down here for a long time," commented one PHS official who feels that the downtown branch of the service is in danger of being devalued, "but now I'm afraid they're going to move the whole dog out to Bethesda."

Considering the potential importance of the regional complex program, it has provoked surprisingly little thoughtful discussion. The American Medical Association, after months of silence, finally issued a critique addressed to the report but ignoring the bill. For the most part the AMA confined itself to general statements indicating disapproval—"One should disabuse himself of any preconception that the commission presented carefully reasoned scientific conclusions supported by relevant data" —and did not go into a detailed analysis. The American Academy of General Practice has also attacked the report. A resolution passed at the organization's annual convention in San Francisco this month urged "active and continuing effective and forceful opposition" to the commission's recommendations, stating that they pose "a far greater threat to the private practice of medicine than the medicare plan." "Not only would implementation of this proposal have an almost immediate and negative impact on the quality of medical care available to patients," the Academy asserted, "but also the talents of many fine young medical school graduates would be funnelled into a narrow Federal corridor and be unavailable to other ailing citizens who are outside the heart disease-cancer-stroke periphery."

A certain amount of opposition to the commission recommendations is reported to be coming also from various state health officers, who are said to be sensitive to the possibility of federal inroads on their responsibilities. And the report has also produced some dissatisfaction among certain basic researchers who are said to feel that the chief factor limiting success in the war against disease is not the organization of medical services but the absence of fundamental knowledge. These individuals are reported to believe that the commission is promising more in the way of health victories than medical research is presently able to deliver. On the other hand, the report and the bill have received endorsements from groups such as the American Heart Association, the American Cancer Society, the American Hospital Association, and other voluntary agencies. The most surprising feature of the commentaries on the bill is the absence of any serious discussion of its probable impact on the medical schools. There appears to be some feeling in Washington that the program would be useful in providing medical schools with an alternative to their present dependence on federal funds earmarked specifically for research. There is also a feeling that even the non-research-

oriented wings of many medical schools have tended to retreat from community services, concentrating instead on the encouragement of individual excellence, and that the regional-complex program would provide an opportunity to redress the balance somewhat. It seems likely that the proposed program would indeed have those results. But so far relatively little has been heard about whether the medical schools are fundamentally interested in these new responsibilities, whether they are ready for them, and whether they are prepared for the kind of reorientation that leadership of the regional centers would probably entail.—ELINOR LANGER

Announcements

A subcommittee on low-level **contamination of materials and reagents**, established by the NAS-NRC Committee on Nuclear Science, is concerned with radioactive contamination which is too slight to be a significant biological hazard, but can interfere with scientific measurements in fields requiring the use of low-background, high-sensitivity radiation detectors. The major aim of the subcommittee is to help produce and disseminate information on extent and degree of such contamination, and on methods of evaluating and controlling it. The subcommittee invites suggestions, comments, and results of measurements. Correspondence should be sent to the chairman, E. C. Anderson, Los Alamos Scientific Laboratory, Los Alamos, New Mexico.

Grants, Fellowships, and Awards

The department of psychiatry of the University of Washington medical school is offering a training program in **psychological methods for anthropologists** for advanced anthropology graduate students in the area of culture and personality study. The program will be 1 year, and will focus on testing techniques, interviewing, observational study, and personality theory. Stipends of $3000 are available for fourth-year students. (L. Y. Rabkin, Department of Psychiatry, University of Washington Medical School, Seattle)

The **Parenteral Drug Association** is offering a $1000 award for the manuscript it considers best, submitted by a U.S. or Canadian pharmacy school student. General fields of interest for the papers include pharmacy, biochemistry, analytical chemistry, microbiology, pharmacology, quality control, organic chemistry, parenteral manufacturing, and related disciplines. Manuscripts may be 2500 to 5000 words long. Deadline: *1 July*. (Administrative Office, Parenteral Drug Association, Western Saving Fund Building, Broad and Chestnut Streets, Philadelphia, Pennsylvania 19107)

Courses

Two courses have been announced by the International Laboratory of Genetics and Biophysics, Naples, Italy. Each course is limited to 16 participants, and will be presented in English. Applications should be by letter, including the applicant's academic affiliation, age, nationality, proficiency in English, scientific training and publications, and two references. They should be sent to Laboratorio Internazionale di Genetica e Biofisica, Casella Postale 104, Naples. The courses are:

Genetics and physiology of bacteriophage, 23 August to 18 September, for postgraduates in mathematics, physics, chemistry, or biology. Participants will perform fundamental experiments to illustrate the properties of bacteriophage and the quantitative experimental methods in the field. Seminars and discussions will be included. Fellowships for all participants will be provided, for travel and living expenses: six each from the International Cell Research Organization under UNESCO sponsorship and from the European Molecular Biology Organization, and four from the International Laboratory of Genetics and Biophysics. Deadline for receipt of applications: *15 June*.

Methods in mammalian cytogenetics, 18–30 October, for research workers in biology and medicine. Laboratory and class work will be given on the following: tissue culture techinques for chromosome analysis, chromosome analysis in primary cultures and in established cultures, study of the dynamics of chromosome complements in heteroploid cultures, cell and chromosome labeling and autoradiographic techniques, and analysis of meiotic chromosomes. Twelve fellowships are offered, six from International Cell Research Organization and six from the laboratory. Deadline for receipt of applications: *1 July*.

Scientists in the News

The new president of the American Pharmaceutical Association is **Grover C. Bowles, Jr.**, director of the pharmacy department of Baptist Memorial Hospital, Memphis, Tenn.

St. Louis University has appointed **H. Waldo Bird** professor of psychiatry and associate dean at the medical school. He has been associate professor of psychiatry at the University of Michigan medical school.

The medical school has also announced the appointment of **Arthur E. McElfresh**, formerly associate professor of pediatrics at Temple University, to be professor and chairman of the department of pediatrics.

Luigi Mastroianni, Jr., professor of obstetrics and gynecology at U.C.L.A. and chairman of that department at Harbor General Hospital, Los Angeles, will succeed **Franklin L. Payne** as chairman of the department of obstetrics and gynecology at the University of Pennsylvania medical school, in June.

Bernard Roizman, of Johns Hopkins University, will become an associate professor of microbiology at the University of Chicago, in July.

Allen Thomas Bonnell, vice president of Drexel Institute of Technology, has been named president of the Community College of Philadelphia.

Kermit Gordon, director of the Bureau of the Budget, will become a vice president of the Brookings Institution 1 June. In the newly created position he will be responsible for Brookings' research and educational programs.

Zebulon Waters White, professor of industrial forestry at Yale, has been appointed associate dean and director of professional studies at the forestry school, effective 1 July.

Morton F. Reiser, professor of psychiatry and director of research at Albert Einstein College of Medicine, Yeshiva University, New York, has been named chief of the division of psychiatry at Montefiore Hospital and Medical Center, New York.

Erratum: Figures 4 and 9 of the report "Reinforcement schedule generated by an on-line digital computer," by Bernard Weiss and Victor G. Laties (30 April, p. 658) were interchanged.