ject did come up during questioning.

Question: The national heart plan seems to have vanished somewhere in HEW. Could you give me some. . . .

Obviously, Weinberger does not like accusations that these plans, or others on related health matters, are lost. He broke in before the question was complete to say, "No. It hasn't vanished anywhere. . . . It reached my office 2 days ago. . . . It is there, alive, well, and moving along the necessary loops." It was completed by officials of the National Heart and Lung Institute in early May and has been somewhere in HEW since the middle of that month, in loops. In contrast to the voluminous cancer plan, the heart plan is a tidy, single volume only some 60 pages long.

The only announcement that came out of the focus on health that constituted, or was intended to be, news had to do with blood. There is a new national blood policy, which will lead the country to an all-volunteer donor system if it works. What HEW wants is a nationally coordinated system for handling blood that will solve existing problems of uneven distribution, uneven quality (too much blood is contaminated with hepatitis virus), and high cost. Apparently, however, HEW has no strict guidelines for achieving this goal. Instead, it will call a conference of all institutions and agencies in the private sector that are in the blood business and ask them to handle the details. What if they cannot get together and do away with the internal bickering that has characterized many of their previous dealings with each other? HEW will try to get its ideas translated into law; but first, it is going to try to get a volunteer blood system from the private sector voluntarily.

The focus on health was the Administration's first large-scale attempt to get its views on these matters to the press. Some reporters believe it was the first honest effort to be cooperative at all. Like most ventures of this kind, it had its advantages and its failings. Certainly, its bringing together of so many government health figures was useful to the press, particularly to the considerable number of reporters who came from out of town. And certainly, the obvious attempt public affairs secretary Helm is making to make health officials more accessible in the future is appreciated. And, exposure to their thinking is useful. The main trouble with the health gala was that one came away with the feeling that, really, nobody had very much to say.

—BARBARA J. CULLITON

Research Systems: OECD Verdict on Five Countries—So Far, So Good

The Organisation for Economic Cooperation and Development (OECD) has extended its comparative study of national research systems to five small but industrially successful Western European countries—Belgium, the Netherlands, Norway, Sweden, and Switzerland. The study* complements an earlier one of France, Germany, and the United Kingdom (*Science*, 14 April 1972) and compares the small countries' research efforts favorably with those of the big three of the European Community.

If the five small countries are compared collectively with the three big countries, says the report, "it would appear probable that the former have not only made a contribution to the advancement of science which is proportionately greater than that of the latter, but they have utilized and applied their science with much more profit and efficiency than the big countries."

The OECD surveyors, however, mix a caution with the kudos. They note that the research systems of the five small countries have flourished in a period when research efficiency could be judged strictly by its contribution to economic growth. These countries are now entering an era when science and technology are being called on to cope with problems of the society which cannot be defined in purely economic terms. The report suggests that existing research systems face trouble in meeting these new social and cultural objectives.

The gross anatomy of research systems in the large and small countries is seen to be very different. Most obviously, the small countries have not embarked on major, national technological undertakings in defense, space, and nuclear energy with their large commitments of money and manpower.

The authors of the report also note a marked difference in the general atmosphere prevailing throughout the scientific enterprises in the small countries as compared with the large. The former do not show the symptoms of the "recession" in science which has caused anxiety and unrest among scientists and engineers in the large countries. Evidently there has been reasonable continuity in science funding and science policy in the small countries. In the case of France, Germany, and the United Kingdom, on the other hand, the report observes that there have been determined and sometimes abrupt

Table 1. Performance and funding of R&D in the government sector relative to the national R&D effort in member countries (1967). [OECD figures]

Country	Gross national expenditures (10^9)	Government financed R&D		Government performed R&D		Performance as percentage of funding
		10^9	%	10^9	%	
Belgium	176.008	33.096	18.8	18.333	10.4	55.4
Netherlands	513.812	200.267	39.0	13.812	2.7	6.9
				(113.139)*	(22.0)*	(56.1)*
Norway	80.711	46.759	57.9	16.596	20.6	23.5
Sweden	336.090	135.840	41.1	47.748	14.5	35.1
Switzerland	303.950	64.117	21.1	19.293	6.3	30.1
France	2,506.750	1,340.615	53.5	804.742	32.1	60.0
Germany	2,084.324	835.700	41.3	106.225	5.1	12.7
United Kingdom	2,480.088	1,229.215	49.6	575.156	23.2	46.7

* Figures in parentheses include funds for a legally independent research organization which has traditionally been classified as a private nonprofit institution but really functions as part of the government sector in the Netherlands.

* *The Research System. vol. 2.* Obtainable from OECD Publications Center, Suite 1207, 1750 Pennsylvania Avenue, NW, Washington, D.C. 20006. $6.75.

efforts at structural "reform" of the research system with the aim of modifying the funding, organization, aims, and utilization of research.

The success of the small countries' research style, the OECD analysts suggest, is in its responsiveness of all research sectors to economic needs. The relatively small size of the scientific community in each of the countries seems to be an important factor in the close contact and good relations existing between scientists and engineers in universities, industry, and government laboratories. Enrollment in pure science studies in higher education stands at about 120,000 in France and 70,000 in Britain while it amounts to no more than 10,000 in Sweden, which has the largest enrollment among the five small countries, and 2000 to 3000 in Norway, which has the smallest. In a country with a small number of universities and industrial and government laboratories, direct personal links are easier to establish and maintain than in the large countries where barriers between

Institute of Medicine Elects New Members

The Institute of Medicine of the National Academy of Sciences has elected 60 new members, bringing the young institute's total membership to slightly more than 200 men and women. Institute members are chosen for their "significant contributions" to health and medicine and, also, to such related fields as the social and behavioral sciences, law, administration, and engineering.

Anyone who accepts election to the institute does so with the explicit understanding that he or she will be expected to actively participate in the work of its committees that are engaged in a broad range of health policy studies. Newly elected members are:

Philip H. Abelson, president, Carnegie Institution of Washington, Washington, D.C., and editor, *Science*

E. H. Ahrens, Jr., Rockefeller University, New York

R. A. Alberty, dean, School of Science, Massachusetts Institute of Technology

Odin W. Anderson, professor and director, Center for Health Administration Studies, University of Chicago

W. W. Armistead, dean, College of Veterinary Medicine, Michigan State University, East Lansing

Myrtle Kitchell Aydelotte, professor of nursing and director, University of Iowa Hospitals and Clinics, Iowa City

Mildred Mitchell Bateman, director, West Virginia Department of Mental Health, Charleston

Edgar T. Beddingfield, Jr., Wilson Clinic, Wilson, North Carolina

Harvey Brooks, dean of engineering and applied physics, Harvard University

Lewis H. Butler, adjunct associate professor of health policy, University of California, San Francisco

Guido Calabresi, professor of law, Yale University

Seymour S. Cohen, American Cancer Society Professor of Microbiology, University of Colorado Medical Center, Denver

Robert Coles, University Health Services, Harvard University

James F. Crow, Department of Medical Genetics, University of Wisconsin, Madison

Herbert S. Denenberg, Commissioner, Insurance Department, Commonwealth of Pennsylvania

Carl Djerassi, professor of chemistry, Stanford University

Albert Dorfman, Department of Pediatrics, University of Chicago

Merlin K. DuVal, Jr., director and dean of medicine, Arizona Medical Center, University of Arizona, Tucson

Adrian L. Edwards, practicing physician, New York

Leon Eisenberg, professor of psychiatry, Harvard Medical School, and chief of psychiatry, Massachusetts General Hospital

John R. Evans, president, University of Toronto, Ontario, Canada

Elsie A. Giorgi, practicing physician, Beverly Hills, California

Donald A. Glaser, professor of physics and molecular biology, University of California, Berkeley

Carl W. Gottschalk, Kenan Professor of Medicine and Physiology, University of North Carolina, Chapel Hill

James L. Grobe, practicing physician, Phoenix, Arizona

Michael J. Halberstam, practicing physician, Washington, D.C.

James W. Haviland, clinical professor of medicine, University of Washington School of Medicine, Seattle

M. Alfred Haynes, chairman, Department of Community Medicine, Charles R. Drew Postgraduate Medical School, Los Angeles

Seymour S. Kety, director, Psychiatric Research Laboratories, Massachusetts General Hospital, Boston

Eleanor C. Lambertsen, dean and professor, School of Nursing, Cornell University–New York Hospital

LaSalle D. Leffall, Jr., professor and chairman, Department of Surgery, College of Medicine, Howard University, Washington, D.C.

Charles E. Lewis, professor of medicine and public health, Center for the Health Sciences, University of California, Los Angeles

Brian MacMahon, professor of epidemiology, Harvard University School of Public Health

Margaret E. Mahoney, vice president, Robert Wood Johnson Foundation, Princeton, New Jersey

Marion Mann, dean, College of Medicine, Howard University, Washington, D.C.

Robert Q. Marston, scholar in residence, University of Virginia, and distinguished fellow, Institute of Medicine, National Academy of Sciences

Robert K. Merton, Giddings Professor of Sociology, Columbia University, New York

J. Warren Perry, dean, School of Health Related Professions, State University of New York, Buffalo

Robert G. Petersdorf, professor and chairman, Department of Medicine, University of Washington, Seattle

James G. Price, practicing physician, Brush, Colorado

Helen M. Ranney, chairman, Department of Medicine, University of California, San Diego

Frederick C. Robbins, dean, School of Medicine, Case Western Reserve University

Doris E. Roberts, chief, Nursing Practice Branch, Public Health Service, National Institutes of Health, Bethesda, Maryland

William R. Roy, member of Congress, Second Congressional District of Kansas, House of Representatives, Congress of the United States

Lisbeth Bamberger Schorr, Washington, D.C.

Charles L. Schultze, senior fellow, Brookings Institution, Washington, D.C.

Eleanor Bennert Sheldon, president, Social Sciences Research Council, New York

Cecil G. Sheps, vice-chancellor of health sciences, University of North Carolina, Chapel Hill

Lloyd H. Smith, Jr., professor and chairman, Department of Medicine, University of California, San Francisco

Anne R. Somers, associate professor of community medicine, College of Medicine and Dentistry of New Jersey, Rutgers Medical School, Piscataway, New Jersey

Nathan J. Stark, chairman of the board, Crown Center Redevelopment Corporation, Kansas City, Missouri

Rosemary Stevens, associate professor of epidemiology and public health, Yale University School of Medicine

Andrew L. Thomas, practicing physician, Chicago, Illinois

Paul D. Ward, executive director, California Committee on Regional Medical Programs, Oakland

Malcolm S. M. Watts, associate dean, School of Medicine, University of California, San Francisco

Louis G. Welt, professor and chairman, Department of Internal Medicine, Yale University School of Medicine

Kerr L. White, professor of medical care and hospitals, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Maryland

J. Jerome Wildgen, practicing physician, Kalispell, Montana

James B. Wyngaarden, professor and chairman, Department of Medicine, Duke University Medical Center, Durham, North Carolina

Asa G. Yancey, medical director, Grady Memorial Hospital, Atlanta, Georgia

scientific sectors are notoriously high. Attitudes toward applied research also seem more enthusiastic in universities in the small countries.

Scientists from the small countries almost universally get part of their training or early research experience outside their own countries. Later, they seem likelier to frequent international scientific meetings and to view their own disciplines in a world rather than a national perspective.

The effect on science policy decisions of the existence of the extended scientific family in the small country is, not surprisingly, a habit of wide consultation and diffusion of responsibility. Direct policy intervention by government authorities seems to be rare in the small countries, and such intervention has not been thought necessary because scientists and engineers have been able to react readily to economic events and to adjust to new circumstances.

The tradition of a self-adjusting mechanism, however, is not an unmixed blessing. The following excerpt from the report indicates how the authors of the report see the developing challenge to the small countries.

> In practice, world industrial competition is developing on an ever wider front and, apparently, at an ever growing speed. In the old days relatively narrow specialisations allowed relatively small firms to dodge competition by means of highly specialised and technologically advanced products. With the expansion of scientific and technological efforts in different countries, these "technological niches" became harder to find and, if they were to be lastingly held, called for substantial capital investment. A similar trend is taking shape in the advanced research sector; countries with relatively modest resources find themselves more and more directly faced with the need to concentrate their efforts in certain fields. The difficulty is obviously to choose effectively.

Lumping together the five countries for the purposes of analysis inevitably means dealing summarily with the special conditions which affect each one. Belgium, for example, is grappling with the task of converting obsolete industries, and Norway, the least industrialized country of the group, has recently been blessed with an energy windfall with the discovery of major gas and oil resources off its coasts.

Then there is the new dimension of difficulty. A laissez-faire policy or "scientific liberalism"—in the 19th-century European sense of entrepreneurial freedom—has meant economic efficiency for the small countries as long as economic growth was the overriding aim. Such policies are less well suited to achieving aims outside the marketplace.

The difficulties of dealing with the new circumstances under the existing system are set forth in a chapter titled "The limits of 'laissez-faire.'" Obviously, the search for consensus among groups with differing interests holds the danger of paralysis, especially when a significant reallocation of money is contemplated.

Fundamental research presents a special problem. Basic research has been funded almost exclusively by government through the higher education budgets of the small countries, with industry providing some support for research in areas of its special interest. It is increasingly unrealistic for small countries to try to compete across the board with larger countries in basic research, particularly in fields where large expenditures on facilities and team research are required. Picking targets for fundamental research, however, will exert growing strain on the consensus politics of science in small countries.

It is understandable that the authors focused their discussion on particular issues, since the new report is the second of a projected series of three. The final installment will compare research systems examined in the first two reports with research systems in North America. And relevant background can be obtained from OECD reports on science policy in Belgium, Norway, Sweden, and Switzerland. But many readers will miss a more detailed discussion of the implications of Sweden and Switzerland's neutrality and of the European Community policies for Belgium and the Netherlands which are members and for the three other countries which are not. The research operations of multinational corporations, it is true, fall outside the ambit of national research systems, but they would appear to deserve more attention than they got.

It is hard to argue, however, with the report's major theme, that the fortunate five have been doing a lot of things right, but that they will have to prove themselves even more adaptable to keep making the right research choices and stay competitive.

—JOHN WALSH

South Africa: NASA Inches Out of a Segregated Tracking Station

It was becoming something of an annual spring ritual for Representative Charles B. Rangel, a Democrat from Harlem and a junior member of the House Committee on Science and Astronautics. Each year for the past 3 years, as the space agency budget came up for a final vote, Rangel would take to the floor with an impassioned speech and an amendment to cut out $3 million or so for NASA's space tracking station in South Africa.

The tracking station happens to be the only U.S. government–subsidized installation in the world where racial segregation prevails under law, from top management to the toilets. Rangel and his colleagues in the House black caucus saw the station as an egregious symbol of American acquiescence to apartheid, and they wanted to shut it down (*Science*, 24 March 1972). Space agency officials, on the other hand, argued along with Representative Olin Teague (D–Tex.), the House space committee chairman, that the station was technically South African, not American. And besides, they said, it was essential to the space program. "For the safety of our program we have to have a tracking station in that area," Teague declared, adding that it was "one of the most important tracking stations we have."

That apparently was argument enough for most of the House, which voted Rangel's amendment down each time by a whopping majority.

This spring though, things were slightly different. In May, Rangel rallied