

Summit Calls for Research Integration

Western political leaders endorsed demands to harmonize technical norms and scientific procedures in different countries

Bonn. The seven political leaders who attended last week's economic summit in Bonn may have failed to agree on international involvement in the research stages of the U.S. Strategic Defense Initiative; but they did endorse several steps toward greater integration of their more general scientific and technological activities which could, in the long run, turn out to be just as significant.

The endorsement came in the final section of the joint communiqué issued, as is customary, at the end of the summit meeting. Devoting considerably more space than in previous years to the importance of international collaboration in science and technology, the communiqué focused in particular on the conclusions and proposals of a working group set up at the Versailles summit 3 years ago to explore the relations between technology, growth, and employment—widely known as the TGE group (or, less frequently, the Versailles working group).

Since the Versailles meeting, however, there appears to have been a significant shift in the philosophy dominating the group's activities. As initially conceived and proposed by French President François Mitterrand, one major purpose of this group was to have been the development of a jointly agreed international "division of labor" in major scientific and technological fields.

Such a goal was never warmly received by the other summit countries and, to judge from a report of the TGE group presented to the summit meeting, this focus seems to have been replaced by a new emphasis on the need to agree on common norms and standards—one of the more subjective and hence politically sensitive aspects of research—in fields ranging from high energy physics equipment through measurements in materials science to the environmental impact of genetic engineering.

Overall, the TGE group's report concludes that there has been progress in each of 18 areas of science and technology that were identified, during a brainstorming session between the political leaders at their 1982 meeting in Versailles, as offering the potential for great international collaboration.

"International cooperation in science

and technology has benefited substantially from the encouragement it has received from the heads of state and government during the past three years," says the group's current chairman, Josef Rembser of West Germany's Federal Ministry for Research and Technology (BMFT). "The label 'recommended by the summit' has substantially strengthened national support as well as international partnership within the 18 collaborative areas."

There seems general agreement, for

"The worst kind of protection can lie behind standards," says Mitterrand.

example, that the various groups set up to discuss the use of large-scale research facilities, from fusion devices to the space vehicles needed to explore the solar system, have become a useful forum for exchanging views on the administrative and political aspects of questions that, in the past, tend to have been restricted to the scientific community alone.

Thus the working group on high energy physics, chaired by Alvin Trivelpiece of the U.S. Department of Energy, highlights its conclusion that "new administrative procedures are imperative" for greater international cost-sharing and participation in the construction and exploitation of particle accelerators is to be achieved, since "many of the present procedures are serious obstacles to effective cooperation."

U.S. science administrators have also been keen to maintain a high profile for the activities of the group set up to study collaboration in solar system research. One reason is that the summit's endorsement of projects such as the proposed U.S./Europe/Japan International Solar Terrestrial Physics program is seen by the National Aeronautics and Space Administration as a useful card to play in soliciting financial support for its research activities from Congress.

A second way in which the Versailles

initiative has been successful is in catalyzing international activity around a particular scientific or technological discipline where the exchange of research results and experience was previously ad hoc and fragmentary. Two subgroups frequently mentioned in this context are those on photosynthesis (headed by Japan) which has held a number of symposia and workshops on different scientific aspects, and on food technology (lead jointly by France and the United Kingdom).

Several subgroups have not achieved as much as was initially hoped, partly because of the competitive pressures that, in research fields where commercial considerations already play an important role in decision-making, conflict with suggestions for collaboration. This is already said to have happened to a limited extent in the subgroup on biotechnology but has been much more apparent in that which looked at the technology of high speed trains (one of four subgroups whose work is expected to come to an end over the next year).

In contrast, however, there appears to have been growing enthusiasm in several of the working groups for an area where collaboration does not necessarily conflict with economic competition, namely agreement on common technical standards from research through development to the marketing of final products. Even Mitterrand admitted at his concluding press conference that "the worst kind of protectionism can lie behind standards."

Some of the subgroups have addressed the subject of the technical norms used in research directly and explicitly. This has been the case, for example, with an active group jointly headed by the United Kingdom and the United States on advanced materials and standards. Other groups, such as that responsible for high energy physics which has taken a special interest in the possibilities of encouraging joint research projects into new accelerator and detector technologies, have identified the need to introduce common international standards as part of their broader inquiry into the obstacles currently confronting collaborative research efforts.

The main working group, in a passage

in its report to the summit that the British government is said to have been particularly keen to stress, suggests in particular that mutually compatible procedures in research can act as the precursor to the more difficult problem of standardizing technical products and thus reducing the fragmentation of the international marketplace.

Finally, the political value of agreed international norms covering the regulation of technology has played an important role in two additional topics that were placed on the working group's agenda for the first time last year. One concerns environmental risk assessment, where the summit working group, in a separate report prompted by the British and German governments, has

proposed exploring ways in which greater use can be made of science and technology as "a bridge" between economic and environmental policy.*

At the suggestion of the TGE group, the summit leaders in their final communiqué asked it to "consult with the appropriate bodies about the most efficient ways for achieving progress" in developing "improved and internationally harmonized techniques of environmental measurement."

The second topic is the social and ethical impacts of modern biomedical techniques, including genetic engineer-

ing. Here the summit received the report of a meeting organized 2 weeks ago in Rambouillet by the French government at which a group of invited scientists from each member country discussed how the greater dissemination of scientific information could help stem growing public concerns.

Whether the TGE group itself will remain in existence after next year's meeting in Tokyo remains an open question. Certainly several of the 18 subgroups appear sufficiently active and robust to continue under their own steam or under the wing of some existing international organization, while others seem ripe for retirement, their original task achieved or abandoned.

—DAVID DICKSON

*Report on the Environment by the Technology, Growth and Employment Working Group (Cmnd 9500, Her Majesty's Stationery Office, London, 1985). £6.30.

NAS Elects New Members

The National Academy of Sciences has elected 60 new members and 15 foreign associates. This brings the membership total to 1453 and the foreign associates total to 233. The new members are:

John N. Abelson, biology, California Institute of Technology; **W. David Arnett**, astrophysics, University of Chicago; **Robert J. Aumann**, mathematics, The Hebrew University of Jerusalem; **George A. Bartholomew, Jr.**, zoology, University of California, Los Angeles; **Stephen J. Benkovic**, chemistry, The Pennsylvania State University; **Richard Bersohn**, chemistry, Columbia University; **Allan G. Bogue**, history, University of Wisconsin, Madison; **Herbert W. Boyer**, biochemistry, University of California, San Francisco; **B. Clark Burchfiel**, geology, Massachusetts Institute of Technology; **Mary D. Chilton**, agricultural biotechnology, CIBA-GEIGY Corp., Greensboro, N.C.; **Alfred Y. Cho**, electronics and photonics materials research, AT&T Bell Laboratories, Murray Hill, N.J.; **William W. Cleland**, biochemistry and chemical science, University of Wisconsin, Madison; **Stephen A. Cook**, computer science, University of Toronto.

Eric H. Davidson, cell biology, California Institute of Technology; **Edward F. Denison**, Bureau of Economic Analysis, U.S. Department of Commerce; **Richard E. Dickerson**, Molecular Biology Institute, University of California, Los Angeles; **Mildred S. Dresselhaus**, Center for Materials Science and Engineering, Massachusetts Institute of Technology; **Eugene B. Dynkin**, mathematics, Cornell University; **Paul R. Ehrlich**, population studies, Stanford University; **Sandra M. Faber**, astronomy, Lick Observatory, University of California, Santa Cruz; **Bernard N. Fields**, microbiology and molecular genetics, Harvard Medical School; **James F. Gibbons**, electrical engineering, Stanford University; **Alfred G. Gilman**, pharmacology, University of Texas Health Science Center, Dallas; **Ronald L. Graham**, mathematics and statistics research, AT&T Bell Laboratories; **Victor W. Guillemin**, mathematics, Massachusetts Institute of Technology.

Charles R. Henderson, emeritus professor, Cornell University; **Maurie R. Hilleman**, virus and cell biology, Merck Institute for Therapeutic Research, West Point, Pa.; **Icko Iben**, astronomy and physics, University of Illinois, Urbana; **Erich P. Ippen**, electrical engineering, Massachusetts Institute of Technology; **Walter Isard**, economics and regional science, Cornell University; **Jiri Jonas**, chemistry, University of Illinois, Urbana; **Walter D. Knight**, physics, University of California, Berkeley; **Masakazu Konishi**, behavioral biology, California Institute of Technology; **Serge Lang**, mathematics, Yale University; **James S. Langer**, Institute of Physics, University of California, Santa Barbara; **Paul C. Lauterbur**, State University of New York, Stony Brook; **Tom Maniatis**, biochemistry and molecular biology, Harvard University.

Joseph Pedlosky, oceanography, Woods Hole Oceanographic Institution; **Bernard O. Phinney**, biology, University of California,

Los Angeles; **Kenneth L. Pike**, professor emeritus, University of Michigan, Ann Arbor; **Pasko Rakic**, neuroscience, Yale University School of Medicine; **Robert A. Rescorla**, psychology, University of Pennsylvania; **Paul L. Richards**, physics, University of California, Berkeley; **Wendell L. Roelofs**, New York State Agricultural Experiment Station, Geneva; **Leon E. Rosenberg**, dean, Yale University School of Medicine; **David Sabatini**, cell biology, New York University School of Medicine; **William T. Sanders**, anthropology, Pennsylvania State University; **K. Barry Sharpless**, chemistry, Massachusetts Institute of Technology; **Fred Sherman**, biochemistry and radiation biology and biophysics, University of Rochester School of Medicine and Dentistry; **Melvin I. Simon**, biology, California Institute of Technology; **George Sperling**, psychology, New York University; **Robert Steinberg**, mathematics, University of California, Los Angeles.

Charles R. Taylor, biology, Harvard University; **Kenneth L. Thompson**, AT&T Bell Laboratories; **Ignacio Tinoco, Jr.**, chemistry, University of California, Berkeley; **Martha Vaughan**, National Heart, Lung and Blood Institute, Bethesda, Md.; **Warren H. Wagner**, botany and natural resources, University of Michigan, Ann Arbor; **Thomas A. Waldmann**, National Cancer Institute, Bethesda, Md.; **Robert A. Weinberg**, biology, Massachusetts Institute of Technology; **Bruno Zumino**, physics, University of California, Berkeley.

The new foreign associates are:

John F. Adams, mathematics, Cambridge University, United Kingdom; **Claude J. Allegre**, Institut de Physique du Globe, University of Paris, Strasbourg, France; **Pavel A. Cherenkov**, Lebedev Physics Institute, U.S.S.R. Academy of Sciences, Moscow; **James L. Gowans**, St. Catherine's College, Oxford University, United Kingdom; **Hidesaburo Hanafusa** (Japan), Rockefeller University, New York City; **Alfred D. Jost**, developmental physiology, College de France, Paris; **Hans W. Kosterlitz**, research on addictive drugs, Marischal College, University of Aberdeen, Scotland, U. K.; **Ramón Margalef**, ecology, University of Barcelona, Spain; **David C. Phillips**, Molecular Biophysics Laboratory, Oxford University, United Kingdom; **John G. Ramsey**, geology, Eidgenössische Technische Hochschule and University of Zurich, Switzerland; **Jozef S. Schell**, Max-Planck-Institut für Züchtungsforschung, Vogelsang, West Germany; **C. C. Tan**, Genetics Institute, Fudan University, Shanghai, People's Republic of China; **Amos Tversky** (Israel), psychology, Stanford University; **Douglas E. Yen**, prehistory, Research School of Pacific Studies, Australian National University, Canberra.