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OF THE WEEK

RESEARCH NOTES

ARTICLES

COVER: Sixteenth century engraving by Flemish artist Theodore de Bry from a painting by Jacques LeMoyne shows the area, now Parris Island, S.C., where Spanish troops built Fort San Felipe II and the settlement of Santa Elena. The remains of the fort were found recently under a Marine base golf course there. See p. 139. (Drawing from *The New World*, 1946, by Stefan Lorant, courtesy of National Geographic Society)

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SCIENCE NEWS OF THE WEEK

ACAST Opens UNCSTD With 'Turning Point'

Even before the big conference got under way, a preconference conference in Vienna concluded last week with what participants described as a "momentous" and "historic" turning point in attitudes of the international science and technical community toward global development issues facing the world's poorest and least developed nations.

Nothing demonstrates this turning point more clearly than the announcement of a confederation of 19 international nongovernmental organizations (NGO's) representing an estimated 250,000 or more of the world's scientists, engineers and physicians, says Thomas Malone, treasurer of the International Council of Scientific Unions (ICSU) and foreign secretary of the United States' National Academy of Sciences.

Malone and other delegates to this "by invitation only" event met in a final prelude to the long-awaited and highly controversial United Nations Conference on Science and Technology for Development (UNCSTD) — which began this week in Vienna's Stadthalle (SN: 8/18/79, p. 126).

Last week's colloquium, according to its sponsor, the Advisory Committee on the Application of Science and Technology to Development (ACAST), attempted to "distill the best insight and experience about science and technology in the development process...[It was] charged with finding better ways of overcoming real-world obstacles by humanely exploiting technology in modernization." The result of its 14 working groups is a laundry list of recommendations that will be further distilled into a report to be made available to UNCSTD delegates.

The significance of the ACAST colloquium is that it offers the world's scientific and technical community a chance to formally influence UNCSTD, which by definition is a solely political gathering. Delegates such as the United States' ambassador, Father Theodore Hesburgh of the University of Notre Dame, represent governments at UN meetings, not sectoral constituencies related to conference themes. While each of the UN's member nations was asked to submit a position paper and to include a scientific or technical person in its official delegation, few of the world's scientists and technicians actually influenced UNCSTD's development. The ACAST colloquium might.

The majority of ACAST's recommendations do not call for specific research programs, educational programs or for the development of physical institutions — such as laboratories — but for mechanisms that will link science and technical professionals with economic and development planning in developing nations.

ACAST, which provides advice to UN agencies, is made up of a group of 28 individuals, each chosen on the basis of his or her qualifications — not national or political affiliations. It was formed 15 years ago following the 1963 World Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas. That was a period when optimism in finding technical solutions to social problems, such as poverty and malnutrition, was encouraged by sustained economic growth in the industrial world, advances in space exploration and encouraging results of "the green revolution." It was assumed that all that was necessary to cure societal ills was the application of available knowledge. But as the lofty goals of the 1963 conference failed to translate into a general alleviation of such basic human problems as abject poverty — now estimated to affect some 2.2 billion persons — world leaders slowly began to assess what went wrong.

Two general answers are now being tendered. First, most nations lacked the "political will" to back up their goals with the money and institutional organization needed to carry them through. Second, the scientific and technical community was not sufficiently interested in abandoning its ivory towers for research in the Third World.

And that's where the ACAST colloquium signals an evolution in attitudes, says Mahdi Elmandjra, president of the World Future Studies Federation and a professor at Université Mohamed V in Morocco. An outspoken critic of the political rhetoric and lack of action that has plagued much of UNCSTD's preparation, Elmandjra said in announcing the Federation of 19 NGO's that ACAST aims to establish an organization to "maintain the impulse generated by [UNCSTD] as well as by the present meeting so as to broaden and intensify the participation of the scientific and technological communities in the process of economic, social and cultural development." Elmandjra added that he expects the federation's advice on funding levels, research goals and ways to effectively link a government's development-planning agencies with technical professionals to be both a significant and independent asset to the developing world and to agencies, such as the UN, that aim to assist it.

The "Federation of 19" — which intends to keep its ranks open to like-minded NGO's — grew out of the International Symposium of Science and Technology for Development that met last January in Sin-

gapore. This was one of four major regional "brainstorming" sessions at which the science-and-technology community could address UNCSTD issues. The 19 NGO's that arranged it now form the backbone of the federation announced in Vienna.

Thomas Malone, the former chairman of the Singapore Symposium, told SCIENCE NEWS that even if nothing else comes out of the Vienna meetings during the next two weeks, UNCSTD will have been a success. For the first time, he says, there exists a "committed" technical constituency. He added that this constituency is expected to become the link between governments who want to enlist science and technology for development and the individuals who will ultimately develop and adapt appropriate technologies. □

Drugs: Too many, too often

The prescription of postoperative drugs to fight infection could be discontinued 24 to 48 hours after an operation, saving "from 20 to 25 percent of all anti-microbial drugs used in hospitals," with no ill effect to the patient, a report in the Aug. 19 NEW ENGLAND JOURNAL OF MEDICINE concludes. The study, conducted by researchers at the Harvard Medical School and at the Center for Disease Control in Atlanta, Ga., reviewed 5,288 medical charts in 20 short-stay hospitals in Pennsylvania. The records showed that 10 percent of those hospitalized for surgery received drugs to prevent infection. In almost 80 percent of these cases, the drugs were prescribed for the rest of the patients' hospital stay, often exposing them to unnecessary drug reactions and an increase in cases of microorganisms resistant to drugs, and exposed them to high medical costs. Cephalosporins, ten times more expensive than penicillins and tetracyclines, were the most commonly used drugs, the report says. □

Fermi award given

Harold M. Agnew, former director of Los Alamos Scientific Laboratory, and Wolfgang K.H. Panofsky, director of the Stanford Linear Accelerator Center, received the 1978 Enrico Fermi Award on Aug. 15 from the Department of Energy.

Agnew, now with the General Atomic Co. in San Diego, was a member of Fermi's group that achieved the first nuclear fission reaction at the University of Chicago in 1942. Among Panofsky's achievements are the series of experiments that uncovered the nature of the pi meson.

Named for its first recipient in 1954, the Fermi award was established by the Atomic Energy Commission to recognize scientific achievement in the development, use or control of atomic energy. Last given in 1976, it includes a presidential citation, a gold medal and $25,000. □

Cosmonauts home from a half-year in space

World Wide Photos

Cosmonauts Ryumin (left) and Lyakhov hold flowers following their return from 175 days in space. Additional flowers were later removed, according to Tass, which cited Soviet doctors' view that "a dozen gladioli in these minutes were tantamount for the cosmonauts to the weight of an enormous sheaf of wheat."

Vladimir Lyakhov and Valery Ryumin came home last Sunday. On Feb. 25, the two Soviet cosmonauts had been launched aboard a Soyuz spacecraft into earth orbit, where a day later they boarded the Salyut 6 space station. Their Aug. 19 return to a landing in Kazakhstan marked the end of a 175-day stay in space, eclipsing the previous record (139 days, also held by a Soviet crew) by more than five weeks. "We could have stayed up there longer," Lyakhov told a reporter, "but we are really glad to have our feet on the ground."

Unlike the duo that set the earlier record, Lyakhov and Ryumin spent the time alone. Last year, Vladimir Kovalenok and Aleksandr Ivanchenkov were joined twice by other cosmonaut crews (made possible by the Salyut's double docking system), but the new record-holders were visited only by unmanned Progress supply capsules. An attempt was made in April to send a second crew, but propulsion-system problems forced them to return to earth without docking.

Following the nearly six months of weightlessness, Lyakhov and Ryumin had to be carried from their spacecraft, although according to the Soviet News agency, Tass, "the doctors say that not a single crew has ever returned from a long space flight in such a medically ideal condition." Changes in the crew's bone calcium levels, sense of balance, muscle tone, cardiovascular functions and other aspects will be studied with regard to possible longer missions in the future. U.S. researchers will see some of the data through a joint Soviet-American working group, and in an October presentation to NASA in Houston by Soviet scientists. □

SETI: Second thoughts at IAU

The search for intelligent life elsewhere in the universe began as a topic of science fiction. It proceeded from there to tentative searches apologetically undertaken by a few radio astronomers in what amounted to their spare time and to some rather grandiose plans for the future put forward from certain locations inside NASA. Now the search is finally achieving a certain scientific respectability. That seems to be the meaning behind the choice of the topic for an all-day symposium at the meeting of the International Astronomical Union held in Montreal this week and last week.

But SETI (Search for Extraterrestrial Intelligence) achieves the regard of the conservative and establishmentarian IAU at a certain cost. That cost is some serious second thoughts on the part of some scientists who have been thinking about the enterprise as to whether it is possible at all. This articulates itself into three questions: Are any of them out there? Are they communicating? And finally, to quote symposium participant Sebastian Von Hoerner, "We always speak of intelligent life in space, and the question is how much of it do we have on earth?"

SETI enthusiasts have usually assumed that once a civilization achieved a certain level of technology, it would just naturally spread out and colonize space, either by setting up on such habitable planets as it might find or by building artificial habitats, or both. Eventually such waves of colonization would spread across the galaxy from their original centers. The galaxy would be full of stations we might hear with our radio telescopes.

That is, if the aliens were interested in colonization and interested in communicating with us or with other civilizations unrelated to them. Colonization is seen as a response to population pressure in analogy to similar movements on earth: the Polynesians, the Turkic tribes of central Asia, the nations of western Europe. The suggestion is now strongly made that zero population growth rather than colo-