

abuse of psychiatry for political purposes" in all countries in which they occur (allegations have also been made against psychiatrists in Rumania, Czechoslovakia, Chile, Argentina and elsewhere in South America), and called upon professional organizations in those countries "to renounce and expunge those practices."

While the vote may seem on the surface to constitute little more than a wrist-slap, its implications appear to reach far beyond that. First, observers note that the action was not taken by political representatives of the countries involved, but rather by a body of scientists that historically and instinctively has shied away from such human rights issues. "This is an historic occasion," Bloch told the psychiatrists the night before the vote. "This is the first time we are able to tackle the most important issues that face us today."

Second, the almost frantic efforts of the Russian psychiatrists themselves to convince the delegates to defeat the condemnation proposal showed that they were far from willing to shrug off the action as a harmless, symbolic gesture. Indeed, even as the delegates were filling out their ballots, chief Soviet psychiatrist E. A. Babayan pleaded his case, via an interpreter, into a microphone. "This is an unprecedented case in international practice, when one side is given the opportunity to present slanderous materials, and there is no opportunity for us to take the floor and explain our practices . . . I strongly protest," Babayan said before being ordered to take his seat. The day before, however, the Russian delegates declined to attend a special open session on ethics—a no-holds-barred forum in which they would have had almost unlimited opportunity to state their case to the congress.

But the Soviet explanations and defenses, finally presented at the assembly and at a press conference several hours before, apparently had a tremendous effect upon the congress delegates. In a vote that was expected to pass by a wide margin, the condemnation measure was approved by only two votes: 90 to 88. The vote of individual delegates was actually in favor of the Russians, 33 to 19, but like the electoral college, each delegate carries a weighted number of votes, depending on the size of his or her country's membership to the World Psychiatric Association. (U.S. delegate Jack Weinberg had 30 votes, Babayan had 23.) "It was much closer than expected," National Institute of Mental Health Director Bertram Brown said after the vote. "It was very surprising."

In the end, the anti-Soviet arguments of western psychiatrists, as well as the personal horror stories of the Russian emigrants, swung the delegates' vote. Although the resolution was drawn up by the Royal Australian and New Zealand College of Psychiatrists, it was representatives of the United States and Great Britain who delivered the harshest at-

attacks on Russian psychiatry. Washington psychiatrist Paul Chodoff asserted that for the past six years Russia has engaged "in a systematic policy of suppressing national, political and religious dissent by confining dissenters in psychiatric hospitals until they abandon their views. It is further asserted that certain psychiatrists there connive in this perversion of their profession," Chodoff said.

Chodoff and others attacked the Soviet diagnosis of "sluggish schizophrenia" that appears to be frequently ascribed to dissidents such as Plyushch, Zhores Medvedev and, most recently, to Vladimir Bukovsky, who sent a written appeal for passage of the condemnation measure to this year's congress. (Bukovsky made a similar appeal to the 1971 meeting, but the matter was not discussed at the gathering.) "Even if one should accept the diagnosis of sluggish schizophrenia in these and similar cases," Chodoff said, "one must wonder why a disease without delusions, hallucinations or agitated behavior should require injections of chlorpromazine (an antischizophrenic drug) for its treatment." Finally, Chodoff said that "none of the emigrants" examined by the western psychiatrists "has exhibited signs of mental illness once outside the borders of the USSR."

Babayan and his colleagues vehemently disputed that point, and just before the vote, dramatically produced what they said were certificates documenting the cases of emigrants subsequently hospitalized in western countries. The cases included one person who allegedly committed suicide and one who Babayan said was admitted to a U.S. hospital. Babayan refused to specify the hospital when asked. "Ask your State Department," he said. The case certificates were not released to the press because of the WPA's medical ethics ruling.

The Soviet psychiatrists systematically denied all the charges against them and denounced Bloch's book as "well-composed slander." "In no one case in USSR history was a healthy person admitted to a hospital," Babayan said. The Russian delegates condemned the congress voting procedure as "undemocratic." Moscow psychiatrist Dmitri Venediktov added, "Sometimes one forgets whether this is an international congress and mistakes it for an American one." The Soviets challenged their detractors to produce formal certificates of examination documenting the alleged sanity of the Russian patients who emigrated to the West. And an open invitation was extended to psychiatrists from the United States, Great Britain and other countries by Georgi Morozov to visit the Serbsky Institute, a forensic psychiatry institution which is the main target of western critics.

Perhaps the strongest attack on the Russians came from London, Ontario, psychiatrist Harold Mersky, who called

for the outright expulsion of the Soviet delegation from the World Congress. "The pretense that we can still cooperate with such representatives would be both ludicrous and shameful," he said. During the open session from which they were absent, the Soviets sent a message to the delegates, surprisingly, through American Psychiatric Association ex-president J.P. Spiegel—claiming they were being "tried and found guilty . . . beforehand," and saying they deserved a "change of venue."

Current APA President Jack Weinberg, whose resolution for the establishment of a permanent WPA investigative committee on ethics was adopted, blasted the allegations (and Spiegel, himself, for relaying them). "There is no change of venue," Weinberg said. "This is the World Congress of Psychiatry. The people are here." □

Voyager 1: On the catch-up trail



Voyager 1 makes its smooth departure.

You'd barely think they were twins. The Voyager 2 spacecraft was launched toward the outer planets on Aug. 20 (SN: 8/27/77, p. 132) to the accompaniment of bumps, shivers and an instrument-laden "science boom" that apparently failed to lock in its fully extended position. With Voyager 1, however, it was an entirely different story. On Sept. 5, a day so calm (despite storms to the west in the Gulf of Mexico) that weather-monitoring aircraft were sent home, Voyager 1 was carried aloft from Florida's Cape Canaveral in a blissfully smooth beginning to its multi-year mission to Jupiter and Saturn.

Voyager 1 was the second of the two probes to be launched, because it will follow a faster course and be the first of the pair to reach the giant planet. It will take the lead on Nov. 28, when it passes by its predecessor at a distance of about 16 million kilometers, bound for encounters with Jupiter on March 5, 1979, and Saturn on Nov. 12, 1980. Voyager 2 will not reach Jupiter until July 10, 1979,

and Saturn on Aug. 27, 1981, possibly going on to Uranus and Neptune.

Two sets of springs added to Voyager 1's science boom helped it unfold perfectly and lock in place, as did two other booms carrying a pair of magnetometers and the craft's nuclear power supplies. Four of the 11 scientific experiments were at work within hours of the launching, and two more were switched on a day later.

Voyager 2, meanwhile, with years to go before its primary mission begins, has already created considerable scientific excitement on its own. The science boom, says project manager John Casani, is probably not latched, but it seems to be only 0.2° away from its full extension and will probably stay there, thanks to stiff springs and a lubricant that will become increasingly viscous in the cold of space. And Voyager 2's instruments are already at work.

The Voyagers are the first U.S. spacecraft to carry antennas intended primarily for *planetary* radio astronomy, sent along to monitor the radio outpourings known from Jupiter and suspected for the other worlds on the target list. But Voyager 2 also has apparently added important new data on yet another source: the earth itself. Like Jupiter (and the sun itself), but to a lesser extent, earth is a known emitter of radio noise over a wide range of frequencies. Of particular importance are earth's low-frequency "kilometric" emissions, which are often associated with such phenomena as auroras. Past space probes (such as the RAE's and IMP's) have reported on the power spectra, time variations and spatial locations of the kilometrics, but the Voyagers, with their 90°-opposed dipole antennas, are the first craft equipped to provide the vital step of measuring their polarization. This is almost a necessity, says Voyager scientist Joseph K. Alexander of the NASA Goddard Space Flight Center, in figuring out how earth's kilometric emissions are born. An early look at the data suggests that the polarization data should be extractable, he says, and Voyager 1 may do even better, since Voyager 2 spent some of its early flight time in positions that were less than ideal for such measurements.

But there are other favorable omens from Voyager 2. Its plasma-wave instrument (the Voyagers carry the first of their kind) is detecting plasma variations 1,000 times finer than those in any previous data. And the craft's wide-angle camera—the *less-sensitive* of its two—has already detected type M stars of magnitude 6.9 and type K stars of magnitude 7.3, both dimmer than the instrument's mentors had predicted. Furthermore, the faint stars were recorded when the "scan platform" holding the cameras was moving six times faster than it should have been, which would have reduced the chance of recording dim sources. The planetary encounters, with such problems presumably long since resolved, should be spectacular indeed. □

Hold him underwater till he communicates

Ball-point pens that write under water are no longer advertised. Perhaps they inspired too many jokes. (Now they write on butter—which is fine if your cattle have literary ambitions.) A more useful artifact for underwater communication is a laser that works under water—one whose output is in the proper wavelength range for transmission through seawater. A laser in this range—it produces blue-green light at 502 to 505 nanometers wavelength—is reported by the Naval Oceans Systems Center at San Diego. According to its developers, Erhard J. Schmitschek, John E. Celto and John A. Trias, all of the Center's Communications Systems and Technology Department, it is the first laser to produce visible light by a technique in which the lasing material is energized by being photo-dissociated.

The lasing material is mercuric bromide, which is chemically dissociated by being hit with a light beam from an argon fluoride exciter laser. The energy sup-

plied by the argon fluoride light raises the mercuric bromide molecules to an energy level where they separate into electronically excited mercurous bromide and bromine. The mercurous bromide then emits the blue-green light as it loses its excess energy. The laser has operated in the laboratory for extended periods as a sealed system, which indicates that after the mercurous bromide de-energizes itself, it recombines with the loose bromine to give back the mercuric bromide. This could lead to closed system lasers with minimal deterioration of the lasing material.

Schmitschek also believes that the success of this experiment could lead to the use of a whole generic class of dihalides (including those of zinc, cadmium and lead) in similar lasers. It also appears possible to bring about the excitation-dissociation of the mercuric bromide with pulses of energetic electrons as well as with light, and that is being worked on, too. □

Heart disease and life stress

There is ample evidence that heart disease is genetically based. There is also increasing evidence that heart disease is triggered by environmental inputs such as diet, smoking and life stress. Might any one of these environmental factors be a stronger heart disease factor than the others? Einar Kringlen of the University of Oslo in Norway has studied heart disease among identical twins who were not identical as far as heart disease was concerned. In such studies the environmental influences on heart disease can be separated from genetic influences. Kringlen reported last week at the Second International Congress of Twin Studies in Washington, that the primary environmental culprit appears to be life stress.

Kringlen and his co-workers screened 10,000 patients who had had heart attacks in Norway between 1971 and 1975 to see whether any were identical twins and whether they had living cotwins who had not had heart attacks. The researchers found 78 patients who met these criteria. They then asked the patients and their cotwins whether they would participate in a study designed to separate the influences of genes and different behaviors on heart disease. The twins were interviewed in their homes about their lives and problems. So far, half of the twins have been investigated. The most striking observation to emerge from the study so far is that most were rather hard-working people—"pillars of society." However, those twins who had heart attacks had worked more strenuously than had their cotwins who had not had heart attacks. Kringlen cited two cases to illustrate this finding.

One case history concerned a pair of male twins born to a large Norwegian

farm family. Twin A went to trade school and twin B went to sea. Twin A then started his own business and twin B became a construction worker. Both worked hard, but twin A worked especially hard. For many years he commuted between two towns and worked irregular hours. The only life crisis experienced by either twin was experienced by twin A; it was a business crisis.

Both twins were happily married and extroverted. They had regular, orderly habits and drank moderate amounts of alcohol. Twin A smoked 16 cigarettes a day, twin B, 6. Twin A exercised more than twin B did. Twin A had his first heart attack at age 64 and two more at age 66. Twin B had no heart attacks. Kringlen attributes twin A's heart attacks to his considerably more stressful lifestyle.

The other case history concerned a pair of female twins who lived on two farms in Norway. Twin A's husband died at age 52 from cancer, so she had to take total responsibility for their farm and children. Twin B, in contrast, lived a quiet, protected life with her husband. He did the farming, and they had no children. Neither twin smoked. Twin A experienced several heart attacks, twin B none. Here, too, Kringlen attributes twin A's heart attacks to a more stressful life.

Exactly how a hectic life might actually trigger a heart attack has not yet been answered by this study. Both of the heart attack victims cited above had had only mildly elevated blood pressure and cholesterol levels in their blood—in fact, they had about the same levels as their cotwins who did not have heart attacks. High blood pressure and high cholesterol levels are known heart attack risk factors, which can be precipitated not only by genes but by diet and stress. □