NAS Extends Boycott of USSR

The Olympic boycott didn't get the Russians out of Afghanistan, but it did keep a lot of athletes from doing their thing. The U.S. boycott of scientific exchanges with the USSR didn't get physicist Andrei Sakharov out of Gorky, but it did bring at least a temporary end to certain scientific exchange programs between the two countries and it may have lasting effects on such programs.

Six months ago, the government-enforced internal exile of Sakharov prompted numerous U.S. science organizations to cancel most cooperative exchanges with the Soviets (SN: 2/9/80, p. 84). The National Academy of Sciences, for instance, suspended all bilateral meetings, symposia and workshops with the Soviet Academy of Sciences. Last week at a meeting in Woods Hole, Mass., the council of the NAS voted unanimously to extend that suspension.

The council's statement read, in part: "We remain deeply concerned by [Sakharov's] continuing exile. Our concern is not an indication of agreement or disagreement with his expressed opinions on political issues. It is rather a concern for his rights as a scientist and as a human being and, in particular, for his freedom to pursue scientific work. Our suspension of those interacademy exchanges involving groups of scientists was a direct expression of this concern. This concern continues. The Council hopes that circumstances will so improve as to permit the resumption of these interacademy exchanges."

The exchange of individual scientists between the two countries has and probably will continue (about 90 percent of such exchanges have not been affected), but the suspension of the more formal programs may have some serious effects. When the action was first taken, four meetings were canceled immediately. Two were strictly science meetings — one on lasers and one on brain research. The other two meetings, however, were planning sessions. If they are not re-scheduled, the Academy's exchange program with the USSR may stay locked, like Sakharov, in a politically imposed limbo. If the meetings are rescheduled in the near future, they will be to plan science exchanges that probably could not take place until late 1981.

As it is, the NAS exchange agreement with the USSR expires on Dec. 31. And even if a new agreement is negotiated, the Academy expects it to take a different form. Throughout the 20-year history of the current program there have been misgivings about the balance of exchange, with U.S. scientists claiming to give much more than they get. This imbalance has been admitted to in the past by the Academy, but the decision was made to continue the program because it kept open one of the few windows we have on Soviet science.

The new interagency agreement, if it is negotiated, should be "more appropriate to scientific progress and [have] greater emphasis on multilateral arrangements," says the Academy. In other words, the Academy hopes to structure any future agreement in a way that will make the exchanges more valuable to U.S. and to other scientists.

There has been no formal response from the Soviets. □

Setting sights for Saturn

A barely visible, cloudy smudge on a few otherwise near-featureless photos of Saturn taken Aug. 18 by the Voyager 1 spacecraft may not seem like much basis for excitement, but to scientists in charge of the probe's camera, it is a tantalizing source of hope. For without such markings, the researchers will lack their key clues to the planet's atmospheric circulation — which is likely to be remarkable.

In the cloudtops of gigantic Jupiter, numerous spots, whorls, plumes and other irregular features can be photographically tracked around the globe as indicators of the speed of the winds at different latitudes (as well as revealing their own circulatory patterns). If any such markings exist at Saturn, however, they are apparently overlaid by a high-altitude haze that hides them so that only about nine have ever been tracked by earth-based observers with any certainty, and the Pioneer 11 spacecraft, which flew past Saturn last September, saw virtually none. (Jupiter also has its multicolored, globe-circling bands, and Saturn shows less contrasty equivalents of those bands, but the motions of such axisymmetric features are difficult to track.)

On Nov. 12, Voyager 1 will pass less than 125,000 kilometers from Saturn, and scientists hope that they will by then have been tracking individual cloud features for weeks or months. Until recently, all that could be seen in the photos were the faint encircling bands, producing pessimism from some officials close to the project. On Monday, however, according to camera team leader Bradford Smith of the University of Arizona, a few photos taken through an ultraviolet filter suggested what seemed at a brief look (and after only limited computer-enhancement) to be "a bright cloud" at about 20°N. Never mind its size, or what it might be made of — at this point it is promising enough merely to have something to track as it moves around the planet. And it could be moving at quite a clip.

Early this year, scientists working with Voyager's radio-astronomy instrument detected signals from Saturn that provided the first measurement of the planet's "internal" rotation period — 10 hours, 39.4 minutes. The difference between that and the shorter period calculated from earth-based observations of the few discrete cloud features that have been seen near the equator suggests that Saturn's equatorial winds may be whipping around at speeds greater than 1,400 kilometers per hour — about four times faster than those of Jupiter.

On Aug. 22, Voyager 1 has been scheduled to switch into its "observatory phase," taking many pictures every day instead of just test shots every week or so, and Smith's team will be looking closely for new targets. Closer in, this could include turbulence created between bands of different speeds. A "target-selection working group" will begin meeting Sept. 4 to decide where to aim the camera, which will also be studying the planet's rings and looking at both known and yet-unconfirmed moons. □

Of lead, benzene and coke oven air

The Occupational Safety and Health Administration is simultaneously sighing in relief and holding its breath in the wake of the U.S. Court of Appeals recent decision to uphold the agency's strict lead standard.

On the one hand, the court decided OSHA presented substantial evidence for its decision that a permissible exposure limit of 50 ug/m^3 based on an 8 hour time-weighted average is necessary in certain industrial settings to protect workers from dangerous levels of lead. This judicial vote of confidence in OSHA came on the heels of last month's U.S. Supreme Court decision to strike down the agency's standard for occupational exposure to benzene (SN: 7/12/80, p. 20). The high court ruled in that case that OSHA had not carried its burden of proof of coming up with an evidential foundation for its benzene standard. But, "The lead standard stands in marked contrast to the benzene standard struck down by the Supreme Court," wrote Chief Judge J. Skelly Wright in the opinion of the court of appeals.

Overexposure to lead — which can enter the body by inhalation or ingestion — can cause damage to the brain and to the blood-forming, nervous, urinary and reproductive systems. The court ruled that OSHA justified immediate application of its lead rules to industries such as lead smelting, paint manufacturing and printing, in which exposure to lead is the highest.

On the other hand, the cost-benefit issue — a benzene-case leftover believed by some to be "a bigger question" than the burden of proof issue — remains unresolved. That issue — whether OSHA must be able to justify an exposure limit by comparing the number of workers who will benefit from a limit with the industrial costs of meeting that limit — was not germane to the lead case. So OSHA anxiously awaits the outcome of yet another exposure limit case — one involving coke oven vapors — earmarked by the Supreme Court to resolve the cost-benefit issue. □

You too can live longer

If you've ever felt you won't have time enough before you die to do all the things you want to, maybe you should pay attention to research findings from the University of California at Los Angeles' School of Public Health. Researchers there have documented a strong relationship between longevity and seven health habits:

- never smoking cigarettes
- getting physical activity regularly
- using alcohol moderately or not at all
- getting seven to eight hours sleep per night, regularly
- maintaining correct weight
- eating breakfast
- not eating between meals

In a survey of 6,928 residents of Alameda County, Calif., published in 1972, researchers Lester Breslow and Nedra Belloc reported that the more habits followed, the healthier the person. The following year they reported that 45-year-old men who followed zero to three of the health habits could expect to live only another 21.6 years, while men who followed six or seven could expect to live another 33.1 years, an 11.5 year difference.

In the July issue of PREVENTIVE MEDICINE Breslow and James Enstrom report that the increase of life expectancy persists, and was not due to an initial bias caused by persons unhealthy to begin with being able to follow fewer of the habits.

But though most of the factors are more than familiar by now, they're not necessarily being heeded. "The most striking thing about the new study," says Breslow, "is that it shows a strong tendency for people to persist in health habits. Those who followed six or seven in 1965 tend to still follow six or seven in 1975. Those at the other end are still there. People didn't migrate." □

Short life for panda cub

The first baby giant panda to be born outside of China lived just eight days. The five-ounce cub was suffocated by its 260-pound mother, who rolled on it accidentally while asleep. Zoo officials in Mexico City are attributing the death to the mother's lack of maternal experience. The baby was the first for the approximately six-year-old female, who had just reached sexual maturity. The mother had appeared to be taking excellent care of the cub, putting it down only when she ate or drank. The technical director of the Chapultepec Zoo says they expect the mother, Ying-Ying, to become pregnant again and to be a more successful parent due to this brief experience in baby care.

Mexico City's panda birth is being attributed to the long-term intimacy between the male and female pandas it received from China in 1975. The pair were kept together, contrary to panda-raising custom, because they seemed to get along well. Other possible factors in the successful mating were the liquid diet that supplemented young bamboo trees and Mexico City's high altitude, which resembles the pandas' natural environment. In Chinese zoos, 18 pandas have been born, but 10 died during infancy and two died as juveniles. Mortality rates are not known for newborn giant pandas in the wild.

Wide World Photo

Ying-Ying with her tiny infant on day 7.

At the National Zoo in Washington veterinarians are still waiting to find out whether the U.S. female panda is pregnant after artificial insemination last May. If there is a birth, the zoo will set up continuous, unobtrusive video monitoring of the new mother and cub. The director of the Mexico City zoo plans to report to the National Zoo its observations on its panda mother and her short-lived newborn. A spokeswoman for the National Zoo says, "The birth in Mexico was quite an achievement. It appears they did everything right. The outcome was just unfortunate." □

Headache pills cause kidney problems

The heavy use of headache potions containing phenacetin, a pain reliever, is associated with an increased incidence of kidney damage and urinary tract cancer, say researchers from Bowman Gray School of Medicine in Winston-Salem, N.C. Their findings confirm European studies that suggested the link.

"Out of patients with end-stage kidney disease [those needing dialysis], 13 percent had it because of analgesics," says Thomas A. Gonwa, now at the University of California at San Francisco. These persons "inflicted their kidney disease on themselves," he says.

Phenacetin was at one time an ingredient in many aspirin compounds, but most manufacturers have removed it in the past few years. The Food and Drug Administration reportedly is about to ban it.

Gonwa and his co-workers surveyed the tumor registry at North Carolina Baptist Hospital for incidences of transitional cell carcinoma, a urinary tract cancer associated with the kidneys. In a five and a half year period, they found 115 patients with the carcinoma, six of whom they considered to be analgesic abusers. These six had consumed an average of 18.3 kilograms of phenacetin over 20 to 40 years, which translates to seven or eight phenacetin-containing pills a day, Gonwa says.

The phenacetin-induced cancers may be more often fatal as well. Three of the six kidney patients have died, whereas only 12 of the remaining 109, whose cancers were induced by something other than phenacetin, have died.

The researchers also followed patients who were diagnosed with interstitial nephritis — a degeneration of kidney structure and function that occasionally leads to cancer — and found that roughtly one-third of the patients were analgesic abusers. Persons with phenacetin-associated kidney problems should be watched carefully, the researchers warn.

Gonwa says phenacetin abuse may be seen more in the South, where taking headache powders has historically been something of a social function, taking the place of coffee in a coffee break. "It got to be a custom," says Gonwa.

Phenacetin has been implicated as the guilty agent, rather than aspirin or caffeine, by animal studies that show it to be a carcinogen, as well as by failure to find a similar incidence of kidney problems in persons who take a lot of phenacetin-free aspirin. □