

basic science (*Science*, 15 May 1987, p. 770).

A 59-member steering committee was elected at an inaugural meeting to determine the union's initial strategy. The meeting, which is said to have been attended by over 400 individuals, was apparently turned away from a university hall which had been previously booked in Budapest.

A member of the steering committee said after the meeting that the members of the union include not only university professors and research workers from both the natural and social sciences but also laboratory technicians and unemployed research workers.

Many of these, he said, felt that their interests were not being sufficiently protected by the official Public Employees Union.

According to a broadcast on the Hungarian state radio, the new union intends to "campaign for a science policy that consistently upholds their common interests and to eliminate restrictions that hinder the development of both science and education."

The formation of the new union took place shortly before last week's special meeting of the Hungarian Communist Party. In his speech to the meeting, Hungarian leader Janos Kadar denounced the formation of

political organizations outside the party's control, including the scientific union. Two days later, however, Kadar was ousted as party leader and replaced by Karoly Grosz, the former prime minister.

Many members of Hungary's academic community are known to be sympathetic to demands for radical reform that have been put forward by Imre Pozsgay, a member of the Party's central committee who has been arguing forcefully that major structural changes are needed in Hungary's economic and political system if it is to escape its current economic crisis. ■ **D.D.**

## Nicotine Likened to Cocaine, Heroin

In a strongly worded report, Surgeon General C. Everett Koop last week warned the nation's 51 million smokers that the nicotine in their cigarettes and other tobacco products is as addictive as cocaine or heroin.

"The pharmacologic and behavioral processes that determine tobacco addiction are similar to those that determine addiction to drugs such as heroin and cocaine," the report concludes. Koop called for new federal action, including a stronger warning label on tobacco products, a ban on vending machine sales, and licensing of tobacco retailers.

"Our nation has mobilized enormous resources to wage a war on drugs—illicit drugs," Koop said at a news conference. "We should also give priority to the one addiction—tobacco addiction—that is killing more than 300,000 Americans each year."

The 618-page report breaks no new ground, but summarizes more than 2000 published studies on nicotine and its effects. It confirms that nicotine acts on specific binding sites or receptors throughout the nervous system. Nicotine passes quickly into the brain, where it interacts with nicotinic receptors in the visual, limbic, and motor systems to increase brain metabolism. Research also shows the drug causes skeletal muscle relaxation, increases heart rate and blood pressure, and regulates the levels of a wide range of chemicals in the blood and brain, including serotonin, adrenaline, pituitary hormones, catecholamines, and vasopressin. Cocaine and heroin act in similar fashion.

Nicotine, the report says, meets the standard criteria for an addicting drug. Like those addicted to illegal drugs, smokers take nicotine compulsively for its mood-altering effects, even when they pay dire physical or social consequences. Smokers do perform better on some cognitive tasks after smoking, the report says, and on average weigh 7 pounds less than nonsmokers.

Smokers develop a tolerance to nicotine and develop withdrawal symptoms when they try to stop, Koop said. When they do kick the habit, they relapse at the same rate as alcohol or heroin abusers.

Since the 1964 Surgeon General's report, the government has considered nicotine a habituating, but not an addictive drug. Koop noted that shortly after the 1964 report, the World Health Organization dropped the distinction. "It is now clear that even by the earlier distinction in nomenclature, cigarettes and other forms of tobacco are addicting and that actions of nicotine provide the pharmacologic basis of tobacco addiction," Koop said.

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The Tobacco Institute, a lobbying association for the industry, issued a statement saying the report "trivializes the serious drug problem faced by society." The claims that nicotine is addictive "defy common sense," the statement said. In response, Koop pointed to a large bar chart showing that tobacco use is linked to more deaths each year than alcohol and illicit drug use combined. "I don't think there's any way you can consider the problem we have as trivial," he said.

The Surgeon General emphasized that smokers should not be discouraged by the report. He noted that 40 million Americans have already quit smoking, and the report outlines a number of pharmacologic and behavioral treatments for nicotine addiction. He called on health insurers to pay for treatment programs that help smokers quit, just as they pay for alcohol or drug detoxification.

Like the 1964 report linking cancer and smoking, the new report may well have more political than scientific impact. It comes at a time when antismoking activists have scored major victories. Localities increasingly are banning public smoking, and one major airline has outlawed smoking on all continental flights, upping the tension between smokers and nonsmokers. Koop said he hoped the report would not further alienate the two groups. "I would think it would make nonsmokers more sympathetic to smokers who can't quit," he said.

Koop also called for more research into the brain mechanisms of nicotine addiction, into the phenomenon of "chippers" (people who use tobacco or other drugs occasionally without becoming addicted), and into new ways to help people stop smoking without gaining weight.

Capitol Hill has responded to the report with a flurry of activity. At a news conference, Representative Henry A. Waxman (D-CA) called the tobacco industry "a multibillion dollar drug empire" and promised that his subcommittee on health and the environment would consider bills to give the Food and Drug Administration jurisdiction over tobacco. Senator Bill Bradley (D-NJ) introduced a bill to add a new label to tobacco products and advertising: "Warning: smoking is addictive. Once you start, you may not be able to stop." Other members of Congress called for renewed support of bills that would address many of Koop's concerns, especially ways to counteract the tobacco industry's advertising appeals to children and teenagers. ■ **GREGORY BYRNE**