

feron. They have completed biochemical tests on four. Within 12 to 24 hours after administration of the drug, interferon was found in the blood of two. "This gives us confirmatory evidence of interferon induction that was missing until now," says Dr. Hilleman.

One patient developed a slight fever from poly I:C. No other side effects were observed at the doses given: between 25 and 200 micrograms per kilogram of body weight. In continuing experiments to be reported in late spring, the scientists will test patient response to gradually increased doses until a maximum safe level is determined.

It is too early to realize the full implication of the recent human tests, Dr. Hilleman points out. From previous fundamental study there is evidence that poly I:C induces antiviral interferon and halts tumor growth by two entirely different mechanisms. Trials in patients so far neither support nor deny either effect.

Says Dr. Hilleman, "It is far too soon to even speculate about poly I:C anticancer activity in man."

Dr. C. Gordon Zubrod of the National Institutes of Health in Bethesda, Md., agrees. He and co-workers, including Dr. Hilton Levy, recently initiated trials of poly I:C in patients with advanced cancer, though it will be a matter of months before they have evaluated the drug's effects. "We have not even reached the maximum dose yet," says Dr. Zubrod, who also speculates that, "Even if poly I:C has no anticancer activity it may prove helpful in some virus diseases."

Fighting virus diseases, particularly the common cold, is what Dr. Hilleman sees as a role for poly I:C. The next research step will be to give the drug to human volunteers who would then be exposed to viruses.

There is some encouraging evidence for this. When poly I:C is given intravenously in very high doses to animals it produces toxic effects. But when administered topically has no ill effects at all. As eye drops, for example, poly I:C has been used to cure rabbits of a potentially blinding eye infection caused by the herpes simplex virus.

As an anticold drug, poly I:C might be administered in the form of a spray or mist that would enter the lungs or nasal passages directly. In this way, by not giving it by injection into the blood, the toxic effects may be minimized.

While interferon workers in the United States lean to the view that the only way to harness interferon is to stimulate its levels in the body artificially, European scientists favor the idea of using interferon itself as a drug (SN: 8/23, p. 149). □

december 20, 1969

PUBLIC HEALTH

A vote against cigarettes

Last June, just before a law expired that effectively blocked any Government action against cigarette advertising, the House of Representatives adopted a replacement act strikingly similar to the original (SN: 6/14, p. 574). The House bill changed the warning on cigarette packages to read, "The Surgeon General has determined that cigarette smoking is dangerous to your health and may cause lung cancer and other diseases." At the same time, it went a long way toward tying the hands of the Federal Trade Commission, which has been threatening to require advertisements to carry a warning as well. The House bill would bar further regulatory action on advertising and labeling of cigarettes until 1975.

When the House bill passed, Rep. Harley Staggers (D-W. Va.) predicted trouble from antismoking forces in the Senate. His prediction was accurate.

The Senate last week showed itself less concerned with placating the tobacco industry than was the House. By a vote of 70 to 7 the Senate passed a bill that would ban cigarette advertising on television and radio as of January 1, 1971. And if the tobacco industry then channels the bulk of its advertising dollars to newspapers and

TEACH-IN

Ecology on the campus

Student civil rights demonstrations in the early sixties forged the weapons that were adopted later in the decade by the opponents of United States military policies and what came to be called the academic establishment.

Now shifting their targets to concern for the environment, students across the country are planning a massive ecological-environmental teach-in on university campuses for April 22. It promises to become a focus for what appears to be an emerging theme of student protest at the turn of the decade.

There have already been sporadic environment-oriented demonstrations on some campuses, and students at at least 200 colleges and universities have agreed to participate in the April event. The April teach-in's organizers expect the day to dwarf even the massive civil rights and moratorium day demonstrations.

"Even the Vietnam protest is a warm-up for this," comments Bob Waldrop, local coordinator for Sierra Club activities in Washington, D.C. "If the kids see no sense coming out of this, it's going to hit the fan."

magazines, the door is open to an FTC regulation demanding health warnings in newspaper and magazine ads. Whether or not the print media are flooded with cigarette ads after January 1, the FTC can move in any case after July 1, 1971.

The House is not expected to accept the Senate version of the cigarette bill. A compromise, which could be tougher than the House bill, will be worked out in Senate-House conference.

The fighting in conference is expected to be tough. The cigarette industry is experiencing the sharpest drop in sales since the campaign against smoking started in 1964. The National Center for Health Statistics reported this week that 2.5 million smokers kicked the habit in the last three years, and that the number of young people not starting is increasing. And a BUSINESS WEEK study of the industry reported last week that cigarette sales are off by 10 billion, or 2 percent, from the 1968 level.

In light of this, the tobacco industry and its Congressional allies might be willing to accept a compromise law requiring health warnings in advertising as an alternative to the crippling Senate proposal.

The idea for a national teach-in as a campus-oriented response to the growing environmental crisis began with Sen. Gaylord Nelson (D-Wis.) last January. Nelson was joined by California Rep. Paul McClosky, a Republican, and the broad outlines of the teach-in were drawn at an October conference at Airlie House in Virginia, which attracted a national cross-section of student leadership.

Since then, teach-in commitment appears to have snowballed; Nelson, McClosky and Sydney Howe, president of the Washington, D.C.-based Conservation Foundation, formed the non-profit Environmental Teach-In, Inc. to coordinate the effort but not to direct its methods.

"It is our hope that every campus and community in the country will get involved in this," says one ETI staff member.

A pattern for the nationwide demonstration may be set at the University of Michigan at Ann Arbor; students and faculty plan a four-day environmental session from March 11 to March 14.

The Michigan movement began with

575

40 students and faculty members and grew to the 400-member Environment Action for Survival, mostly as the result of a large university-wide rally in mid-October. The group plans a program combining workshops, seminars, rallies, speeches, entertainment, community-action projects and the sponsorship of local high and junior high school activities.

At the same time, university departments of geology, biochemistry, zoology, botany will examine environment-related advancements in those fields. The law school will review state and Federal laws regulating environment management. Michigan's biomedical research faculty plan a day-long seminar culminating in major panel discussions on the root causes of the environmental crises, including special discussions on human ecology and urban problems.

On the last day of Michigan's observance, action projects will bring students into the community constructing a vest-pocket park in an Ann Arbor ghetto, and conducting a canvass of local grocery chains to encourage environment-related selection of products including the rejection of phosphate detergents.

"The teach-in is not displacing the movement on hunger or Vietnam. It's

another kind of thing," says Douglas Scott, a graduate student at the School of Natural Resources.

Student leaders like Scott see the issue of environment swelling into a major years-long protest. But unlike the divisiveness of the Vietnam moratoria, "We're in this together," he says.

Dr. Francoise Mergen, Dean of the Yale School of Forestry, regards environment-committed students as a new missionary force. "These students should be ordained," he says.

Yale University has long been identified with concern for the troubled environment and will be joined in April by other major centers of teach-in activity at the Universities of Massachusetts, Minnesota, Wisconsin and California and Boston University.

Basically, to the Sierra Club's Bob Waldrop, the environmental movement has only just begun. Having sensed their effectiveness in earlier protests, students see their involvement in the environment issue as representing a step away from traditional conservation tactics.

"Kids feel trapped by our freedom to exploit. They are searching for balance and regard the evils in the environment as much more identifiable than other objects of protest," he says.

NEWS BRIEFS

Pipeline; Laser; West front; Scientist-astronaut

A major obstacle to the construction of a \$900 million oil pipeline running North-South through Alaska's heartland (SN: 12/6, p. 524), was cleared this week with House Interior Committee approval of the project right-of-way. The Senate Interior Committee approved the measure a week earlier.

The action declares no objection to Interior Secretary Walter J. Hickel's proposal to grant right-of-way involving 25 million acres to three oil companies. Most of the land contains permafrost deposits representing one of Alaska's major ecosystems, and the 700-mile hot oil pipeline has been the subject of much heated debate between conservationists, governmental officials and agents representing the three oil companies. Despite the committee action, Hickel said this week that the problem of laying the pipeline would have to be solved before construction can begin. □

The chemical lasers that have been developed up to now require an outside power source for their operation (SN: 11/15, p. 448). This need has been eliminated by Prof. Terrill A. Cool and Ronald R. Stephens, who have developed two continuously self-operating chemical lasers. In their sys-

tems, fluorine is first reacted with nitric oxide. Then deuterium or regular hydrogen is quickly mixed in with carbon dioxide. The result is a chain reaction producing deuterium fluoride or hydrogen fluoride, which in turn cause the carbon dioxide to lase. □

President Nixon last week signed a bill approving a \$250,000 study that will lead to a final determination on whether the defective west front of the U.S. Capitol building (SN: 11/29, p. 506) will be saved by restoration or extension. The bill authorizes a six-month outside study on the restoration plan for the west front. The results of the study will be given to the Commission for Extension of the United States Capitol. □

Geologist Harrison (Jack) Schmitt was under consideration this week as a backup scientist-astronaut for Apollo 15, to fly next November. Dr. Schmitt, a Harvard-trained geologist, has been working with all the moon-landing crews in getting the most out of their moonwalks. He would be the first scientist-astronaut assigned to fly in space, and his backup post would probably lead to a position on the prime crew of Apollo 17. □

DIPHTHERIA

Recurrence of a killer

Vaccination against diphtheria, whooping cough and polio has greatly reduced the incidence of these childhood diseases. But diphtheria, unlike the others, cannot be eradicated by immunization alone. The diphtheria vaccine is unique in that it immunizes against the toxin of the bacteria and not the bacterium itself. The diphtheria germ therefore is carried by individuals whether they are immunized or not, and it is estimated that 2 to 4 percent of the population carries the disease.

The result is that diphtheria keeps popping up in areas where immunization has not been carried out. The latest outburst is in Miami's Dade County, Fla., where eight cases have occurred since late August.

The persistence of the diphtheria bacillus, combined with the virulence of the disease—two of Dade's eight victims died and one was on the critical list this week—causes epidemic-control officials to take heroic measures even when only a few cases occur.

The outbreak in Dade County prompted the largest immunization campaign against diphtheria in years. Some 240,000 doses of vaccine were distributed last week in an effort to inoculate more than 41,000 school children attending over 40 schools in the county. The outbreaks were unrelated to each other and occurred in five separate districts all within a low income area called Liberty City in Northwest Miami.

CBW

A hole in the ban

The Departments of Defense and State sharply debated their interpretations of the use of deadly nonliving toxins this week in the backwash of President Nixon's firm order of Nov. 25 to ban all biological agents for warfare (SN: 11/29 p. 495).

The issue centers on the precise classification of toxins as chemical or biological agents. Toxins are the dead, but poisonous, end-products of bacteria, and since they are not living, Pentagon officials say they don't belong in the category of biological agents; they are chemical agents, they argue.

Mr. Nixon's order banned a first use of chemical agents and leaves the door open for their manufacture.

State Department officials argue that the possible inclusion of toxins as allowable chemical agents invalidates the sense of the President's order. □