a recent technical conference on phencyclidine, and now in the Congress, where a bill is pending that will make it more difficult to buy and sell the chemicals from which PCP is made. The bill, which was introduced in March by Senator Lloyd Bentsen (D–Texas) and is cosponsored by 35 other senators, also would increase the criminal penalties for producing and distributing the drug, up to a maximum of 10 years in prison and a $100,000 fine.

Currently, PCP is treated as a controlled substance on Schedule 2 of the federal drug code, where it is identified as a dangerous, abusable drug with some legitimate purpose—its use as a veterinary anesthetic, mostly by researchers that handle primates. Most states also have enacted sanctions against PCP. But the present laws have proved ineffective against the economic facts of illicit PCP production: An investment of about $5000 in chemicals and unsophisticated kitchen equipment is all that is necessary to produce about 50 pounds of PCP, which sells for more than $5000 a pound, according to law enforcement agents. At those figures, substantial numbers of amateur chemists are willing to risk detection as well as hazards in the manufacturing process itself, which involves volatile or dangerous chemicals such as ether, benzene, potassium cyanide, and hydrochloric acid. Recently, two off-duty policemen in the Washington, D.C., area were arrested for setting up a laboratory to manufacture PCP.

Gus Tsavalas, a convicted manufacturer of PCP now serving a 3-year prison sentence in California, recently testified at Senate hearings that it was also relatively simple to obtain the chemicals essential to make PCP. "Naturally, larger quantities are more difficult to obtain," he said, "[but] smaller quantities are available either through the black market or through various chemical houses that deal with universities and colleges. Larger quantities can be gotten through setting up a phony company and going to a chemical house." Tsavalas did not name the supply houses he had purchased from, but he noted that their "only interest was in finding out if I had a company so that they could sell it to me on a wholesale level rather than sending me

Briefing

Tailoring Technology to the Third World

Worldwatch Institute of Washington, D.C., is continuing its relentless documentation of the deterioration of the earth's resources and the decline of the human condition with the release of its latest paper, "Soft Technologies, Hard Choices," authored by former *Nature* correspondent Colin Norman.

Norman noted that the introduction of inappropriate technologies in developing countries is aggravating unemployment and increasing social inequities as well as wasting energy and chewing up the environment.

He came up with some grim figures: more than 30 million jobs per annum will have to be created to keep pace with Third World population growth, and to raise the lot of the grossly underemployed, 1 billion new jobs will have to be created by 2000.

The nature of a country's technology determines the availability of jobs. When the World Bank loaned Pakistan money to buy 18,000 tractors it turned out to be a disaster because labor needs dropped by 40 percent, whereas adding draft oxen to the Ivory Coast helped because it stimulated auxiliary industries such as oxcart making.

Norman had other depressing observations: 80 percent of the health budget in developing countries goes to hospitals, although it should be going to public health. So skewed is R & D money to the needs of industrialized nations that 98 percent of published research on sewage disposal is irrelevant to the Third World.

But there are signs of hope: Urban planners in Dodoma, Tanzania, drew up a master plan for the city that says the ratio of bicycles to cars must be 70 : 30.

Yalow Declines *Ladies'* Award

Rosalyn Yalow, who won a Nobel Prize last year for her work on the development of radioimmunoassays, does not accept just any old prize. Early this month she turned down one of the *Ladies' Home Journal* "woman of the year" awards because she does not believe in "ghetto" awards.

In a long letter to the magazine's editor, Lenore Hershey, Yalow explained that she does not believe in women's awards unless the accomplishment in question is gender-related. "There may perhaps be good reason for awards to an outstanding father or mother . . . perhaps even for the best actor or the best actress," wrote Yalow. But it is "inconsistent and unwise to have awards restricted to women or to men in fields of endeavor where excellence is not clearly sex-related." She quoted journalist Susan Jacoby that "Women who have 'made it' are no longer pleased to be told their achievements are remarkable for a woman."

Yalow concluded that "There may remain the need for some among us to accept token jobs or token awards as a temporary expedient on the road upwards. But we must view these aberrations as being temporary, worthy only for self-destruction."

Yalow's stand ruffled quite a few feathers according to a Washington *Post* account of a reception for the ten awardees (whose number included First Lady Rosalynn Carter). "I think she better get her nose out of a test tube," said author Liz Carpenter, former press secretary to Lady Bird Johnson. And editor Hershey's opinion was that "when 51.3 percent of the Nobel Prize winners are women, I will agree that the 'Women of the Year' awards are old-fashioned."

But Yalow is unlikely to change her mind. She almost turned down the Federal Women's Award for the same reasons way back in 1961.

Battered but Afloat Peace Academy Concept

Efforts to get Congress interested in the idea of a national peace academy stumbled again last month. On 31 May the House voted down an amendment to the foreign relations authorization act that would have made $0.5 million available for the creation of a commission to study the feasibility of a peace academy.

Ever since George Washington proposed the establishment of a "peace office" there have been people wanting some sort of high-level department to

0036-8075/78/0630-1464$00.50/0

to a retailer to buy the chemicals."

The Senate bill is intended to curb such sales by requiring the registration and reporting of all purchases of piperidine, a chemical essential to phencyclidine. The bill would also require the chemical companies and wholesale supply houses that sell piperidine to verify the purchaser's identification and manufacturing intentions. A similar law is already in effect in California, but all it has led to is an increase in the illicit manufacture of PCP analogs—compounds that use other chemicals in place of piperidine, but have the same mind-altering effects—of which there are about 30.

As a result, the Senate subcommittee on juvenile delinquency is likely to amend the Bentsen bill to extend the reporting and registration requirements to two other chemicals, ethyl amine and pyrollidine, that are essential to the PCP analogs now being detected by law enforcement agents. George Ingle, of the Manufacturing Chemist's Association, has expressed concern about the amendment because of the possibility that Congress will continue to extend the requirements as new ingredients are discovered in the street samples. "We feel that the amendment may only be a foot in the door," he told *Science*. None of the three chemicals is manufactured in great quantity; sales of piperidine amount to only half a million pounds per year, and sales of the others amount to even less. But other chemicals considered essential to PCP production are consumed by the industry in much greater quantities, and the trade association fears that registration of these chemicals would impose a substantial burden.

On the other hand, the industry acknowledges that some form of restriction—either voluntary or legislative—may be necessary to prevent the chemical components of PCP from falling into the wrong hands. Efforts to curb its use by understanding its effects and the motivations of its users have in large part been unsuccessful.

What researchers do know, however, is that an overwhelming number of long-term users considered their first experience with the drug to be pleasant and euphoric, supplying a satisfying escape from anxieties, depression, or external

Briefing

balance the government's massive preoccupation with things military.

These efforts have always met with failure; nonetheless, there are a number of social scientists who believe that the relatively new discipline of "conflict studies" has matured to the extent that it can supply new approaches to the resolution of domestic and international conflicts.

For the past 2 years a small lobbying effort called the National Peace Academy Campaign has been struggling to make its voice heard in Washington. Founded by social psychiatrist Bryant Wedge and James H. Laue, who is director of the Center for Metropolitan Studies at the University of St. Louis, the group wants a federally funded national peace academy that would train people as impartial mediators whose skills would be applicable in every kind of conflict ranging from urban strife to negotiations with terrorists. Wedge says the discipline underwent significant practical development during the civil strife of the 1960's.

There is a good deal of public apathy and skepticism toward the idea of making an applied science out of peace research. Economist Kenneth Boulding, a strong supporter of the cause, attributes it partly to post-Vietnam "peace weariness." David Singer, a political scientist at the University of Michigan, says people just don't buy the idea that conflict research could supply any more insights than those possessed by the average skilled negotiator with a lifetime's experience under his belt. Yet, he says, the findings of various disciplines—those within social psychology on collective behavior and decision-making, for example—can contribute to the development of skills that are not in the repertoire of the average diplomat.

Private individuals have long played an important role in stepping into conflicts where officialdom is deadlocked. A relatively recent example was the excursion of psychiatrist David Hamburg (now president of the Institute of Medicine) into Tanzania to negotiate the release of some kidnapped Stanford students.

Many people think the idea of a peace academy, particularly if it is a federal entity, is naive at best. The State Department does not like it at all. According to Carlton Coon, deputy director of the Foreign Service Institute, the government already has ample access to the developing knowledge from peace research, and the training of foreign service officers is fine the way it is. He found it hard to imagine that a couple of bright young things from the peace academy shipped over to, say, Cyprus, could handle the situation better than officials with extensive training in the language, culture, and politics of the area.

Nonetheless, the campaigners believe that Congress is closer than it ever has been to taking the idea seriously. Last year the Senate passed a bill to set up a study commission (sponsored by Jennings Randolph, D–W.Va. and Mark Hatfield, R–Ore.). A Randolph aide says the wording of that bill will be introduced as a floor amendment to the upcoming Foreign Relations Authorization Act. If that is accepted, it stands a chance of sticking when the bill goes into conference with the House Foreign Relations Committee (which approved it before the full House voted it down).

If the country ever decides to have a peace academy, it will be one of a tiny handful of countries (others being England and Sweden) with national institutes on conflict research or training. "A school would be important as a symbol," says Boulding. "At worst it would do no harm, and at best a lot of good."

A Bio-Energy Catalog

A survey of research in bio-energy described as "the best available box score of things going on in the field," is now available from the Bio-Energy Council in Washington, D.C. Called the *Bio-Energy Directory*,* it contains over 200 abstracts of research on the production and conversion of biomass (wood, manure, seaweed, etc.).

The directory is part of a continuing effort and so far represents about one-third of the research going on in the field, or about $600 million worth of work, says the council's acting director William D. Carey (who is also executive director of the AAAS). Less than half of it is federally funded.

The Bio-Energy Council was set up in 1976 to coordinate and monitor bio-energy research activities. It plans to make information available through various means such as a newsletter, tapes, and a lecture service. It is also helping plan an international conference and exposition to be held in Georgia in April 1980.

*The directory is available for $24 from the Bio-Energy Council, Suite 204, 1337 Connecticut Ave., NW, Washington, D.C. 20036.

Constance Holden