ulation and demography, ability testing, implications of terminating federal payments for abortion, substance abuse, child development research, and aging. The population committee, under contract with the Agency for International Development, has a budget of $513,000. Newly established, part of its job is to figure out how to ascertain fertility and mortality levels in countries where such data are spotty or nonexistent. That is supposed to help AID figure out whether its population programs are working.

The closest ABASS gets to conducting actual research is work being done by the committee on evaluation of government employment and training programs. A half-dozen field personnel are conducting interviews with state and local officials to determine how well decentralization of employment programs is working. This is one of the most generously budgeted of all the ABASS programs, with $340,000 for the coming fiscal year, including money from the Ford Foundation as well as the Department of Labor.

Although in most cases ABASS can only do what someone with money asks it to, it has in some cases, with the help of seed money from foundations, been able to initiate a committee on its own. Such a one is the ability testing committee which, according to its staff director "is close to an ideal committee." Ability testing has been examined in small areas, but this will be the first time anyone looks at the role of such tests in all sectors—education, industry, the military, and the Civil Service. The committee was given money by the Carnegie Foundation and has picked up more support from four government agencies.

The substance abuse committee is interesting because it is actually a committee on "substance abuse and habitual behavior." The title reflects an awareness of the environmental, psychological, and social factors influencing drug abuse much more sophisticated than that of the old NRC committee on problems of drug dependence, which concentrated solely on the biological aspects. Furthermore, the new committee intends to look beyond substance abuse to other addictive behaviors such as gambling—a development reflecting awareness that substance abuse may have more to do with the nature of the abuser than the nature of the substance.

Scientists may be curious to know how the rest of the Academy feels about having social and behavioral sciences firmly in the nest instead of hanging on by their toenails. Handler explains that "the most remarkable aspect of why my colleagues who are natural scientists are not sneeringly distrustful of soft sciences is . . . that we struck a bargain." They

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Coca Proposed as Prescription Drug

Andrew Weil, a physician and Harvard-affiliated ethnopharmacologist, thinks that if the Indians in South America benefit from chewing coca leaves, so might we. At a press conference at the AAAS meeting last month, he announced plans to ask the Food and Drug Administration for permission to test coca, from which cocaine is derived, with people.

Weil, who has had extensive first-hand experience testing the medicinal and psychoactive properties of various New World plants and herbs, thinks that a preparation made from coca leaves—most likely chewing gum—could be useful as an antidepressant, a stimulating substitute for caffeine, and a palliative for stomach disorders.

Coca leaves are chewed in the Andes as energizers and appetite suppressors as well as for social purposes. "It tastes good," Weil told the press conference. "The act of chewing it is pleasant. It has a numbing effect in the mouth [good for mouth irritations] . . . and pleasant, warm feeling in your stomach . . . and there is an elevation of mood." Weil thinks that since Americans are not likely to want to go around chewing leaves, a coca chewing gum could achieve the same effect with gradual release of the ingredients. And he contends that consuming the natural plant extract is safer than many tranquillizers and antidepressants.

This is not exactly a new idea, of course. Sigmund Freud initially thought cocaine would be a good antidepressant; later he changed his mind and dallied with it for such problems as asthma, opiate addiction, and neurasthenia. People used to get a lift from Coca Cola because it contained coca extract until shortly before the Pure Food and Drug Act was passed in 1905 (now the manufacturers used decocainized leaves). Cocaine subsequently developed a reputation as one of the most evil drugs known to man.

The fact that Weil's proposal has not stirred any particularly negative reactions shows how much the climate has changed in recent years. Drug abuse research has gotten considerably more sophisticated since the avalanche of drug using in the 1960's, and there is growing interest in cultural and psychological factors influencing drug use. The attitude that not all drugs of abuse are intrinsically bad is reflected in the Administration's new policy of encouraging research into possible medical uses for heroin and marihuana. Another current that could spur reconsideration of coca is that of rebellion against established medicine and an accompanying interest in resorting to "natural" remedies including herbal ones. So there has been, as Yale psychiatrist David Musto says, "an enormous shift in our cultural attitudes," a change that, as he notes, has occurred partly in reaction to alarmist government attitudes toward drugs such as marihuana.

But whether prescription coca chewing gum will one day be available is another matter. Both Musto and Harvard psychiatrist Lester Grinspoon say that while coca is a good pepper-upper it could not make a dent in a serious depression. As for the other uses, the benefits are probably too marginal to justify increasing the availability of a drug as attractive as cocaine, no matter what form it comes in.

Court Rules GE May Patent New Microorganism

In a decision whose ramifications are as yet very unclear, a patent appeals court has ruled that General Electric may patent a new strain of bacteria developed to combat oil spills.

This is the second time that the panel, the Court of Customs and Patent Appeals, in Washington, D.C., has ruled that biological matter is patentable. The first ruling, last October, held that Upjohn Co. had the right to patent a purified microorganism used to produce the antibiotic lincomycin. GE's new invention was developed by microbiologist Ananda M. Chakrabarty, who introduced plasmids from various hydrocarbon-degrading or-

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were welcome if they followed the rules. Under the NRC reorganization plan an Academy-wide review process was installed. The review board of 11 supervises the review of all reports with an eye towards ensuring that conclusions flow logically (and scientifically) from the information presented. Handler boasts that the Academy is unique in that it is the only place where work of social scientists is passed on by physical scientists. Since the review board is and always will be dominated by hard scientists, there is little chance that the Academy will find itself throwing its immense prestige behind any pie in the sky from the vaporous fringes.

Other parts of the Academy now routinely seek out ABASS expertise. "They have enriched our other committees just enormously," says Handler. The substance abuse committee, for example, is involved with IOM's barbiturate study; the population committee contributed to a symposium held by the life sciences assembly.

A principal function of ABASS is to broaden the flow of communication between social science disciplines and the government. For many years policymakers who wanted social science expertise called upon a small cadre of old hands. One had one's "tame economist," as Handler puts it; if one wanted the word from anthropology one called up Margaret Mead. But serving on an Academy committee is almost like having a mini-internship in Washington. So, the greater number of people brought into the committee system, the more the countryside is sprinkled with social scientists who know a thing or two about the world of public policy.

Physical scientists, of course, have been cultivating these ties through the Academy for decades, and dependence on them has been institutionalized in some cases by the existence of more or less perpetual committees that fill a continuing requirement for external technical advice. "Social scientists are going through a learning process that hard scientists went through long ago," says Handler. He emphasizes that they are still "young" sciences and that "it is difficult to obtain information concerning the questions they address in anything like the confidence they do in the area of natural sciences."

ABASS is getting into high gear in an era when it is beginning to be recognized that traditional disciplines are not in a very good position to look for solutions to pressing social problems. From Handler's lofty vantage point, nothing is really interdisciplinary unless it crosses assembly lines. But from Goslin's perspective, "it's enough to get economists and sociologists to talk to each other

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ganisms into a bacterium to produce a strain that eats up oil more efficiently than naturally occurring organisms do.

In both the GE and Upjohn cases, the biological substances were ruled unpatentable first by a patent examiner and later by the Board of Patent Appeals. But the court, using the same reasoning for GE as it had for Upjohn, decided that the bacterium is a "manufacture or composition of matter" as defined in the basic patent law, which was passed in 1790. The court noted that "the only asserted objection to their patentability is that the microorganisms are alive," a distinction it felt to be "without legal significance." Said the court: "We see no sound reason to refuse patent protection to . . . microorganisms themselves—a kind of tool used by chemical manufacturers in much the same way as they use chemical elements, compounds and compositions which are not considered to be alive. . . ."

Two of the five judges on the panel emphatically rejected this way of looking at things. They agreed with the Board of Patent Appeals that the 1790 Act was only intended to cover things inanimate. As proof they pointed out that Congress in 1930 passed the Plant Patent Act, which authorizes patent protection for certain asexually reproduced new plant varieties. If Congress had intended the original act to cover living organisms there would, then, have been no need to pass the plant act.

The court chose not to get into a discussion of where the line should be drawn when it comes to patenting forms of life, indicating instead that these questions would have to be answered on a case-by-case basis. But it expressed confidence (in wording from the Upjohn case) that "the nature and commercial uses of biologically pure cultures of microorganisms . . . are much more akin to inanimate chemical compounds . . . than they are to horses and honeybees, or raspberries and roses."

Neither of the decisions has yet been appealed by the government, but the Supreme Court may some day find itself in the position of determining when a form of life starts looking less like a chemical and more like a horse.

DNA Work to Begin Soon at Fort Detrick

A district court judge on 23 February cleared the way for P4 gene-splicing experiments to go on at newly renovated facilities in the Army's old germ warfare laboratory in Fort Detrick, Maryland. P4 is the most stringent level of containment in the recombinant DNA guidelines of the National Institutes of Health.

The research was originally expected to start last November, but has been delayed by a lawsuit brought by a Maryland lawyer on behalf of his infant son. Ferdinand C. Mack, a resident of Frederick, sued to halt renovation at Fort Detrick on the grounds that NIH had failed to file an environmental impact statement for the work to be conducted there. NIH agreed to hold off doing any experiments until the environmental impact statement on its guidelines became final in November. The judge subsequently ruled that statement was sufficient. Mack is appealing the decision.

Mack's is one of two lawsuits filed to block DNA research. The other one, still pending, was filed last year in New York state by Friends of the Earth, and is an attempt to enjoin all such research on the grounds that the guidelines are illegal.

Barring any more court intervention, researchers Wallace Rowe and Malcolm Martin of the National Institute of Allergy and Infectious Diseases should soon start the first risk assessment studies, inserting the DNA from polyoma virus (a virus that causes cancer in mice) into *Escherichia coli* EK2 (a weakened strain of bacteria that cannot survive outside the laboratory). This DNA virus–EK2 unit will be injected into mice to see if the DNA can get out and cause the organisms to produce tumors or antibodies. It is not expected that it will.

At present, only two other P4 facilities are being readied. One is a mobile facility located on the NIH campus in Bethesda, Maryland; the other is at the European Molecular Biology Organization (EMBO) in Heidelberg, Germany.

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