blast and wheat rust were allegedly investigated, the laboratory under USDA is now engaged in studying exotic pests that might invade U.S. crops from abroad. C. H. Kingsolver, director of the laboratory, says that a promising pathogen for biological control of the opium poppy would be one that is as widespread as its host, easily and rapidly transmitted, and hardy. If such an organism exists, it is unlikely that a breeding program could significantly improve its characteristics in the short term, Kingsolver says. Although reluctant to comment on poppy pathogens in particular since his laboratory has not yet entered the program, Kingsolver says he rates the chance of developing a suitable pathogen as a "long shot." Unlike other crops, opium poppies have probably retained a large measure of genetic diversity and are unlikely to succumb to a single pathogen, Kingsolver points out.

USDA officials stress that the purpose of the narcotic plants program is solely to develop information that may be placed at the disposal of countries where poppies are grown; there is no question of the United States acting unilaterally to eradicate poppies.

Complete eradication of the opium poppy is probably neither a feasible nor desirable goal; and even the suppression of the poppy in one area may be countered by the development of new sources of supply in others. The supply network is often likened to a balloon—squeezing it in one place may simply cause it to expand some place else. The dimensions of the problem are sketched out in a report prepared for the Cabinet Committee on International Narcotics Control. According to the report, *World Opium Survey 1972*, some 1500 metric tons of opium were produced in 1971 for the licit market (opium is used to manufacture medicinal opiates such as codeine) and probably 1000 tons or more for the illicit market. Much of the illicit opium is consumed at the source, but an estimated 200 tons became available for the international heroin market, enough to make about 20 tons of heroin.

At present there are three major illicit marketing complexes, the Turkish–French–U.S. network, the Southeast Asia network, and the Middle East–Southeast Asia network. According to the World Opium Survey, the first is the primary source of supply of heroin to the United States. Since the Turkish government has forbidden poppy cultivation after this year, the second two networks have the potential for becoming crucial elements in the problem. The price of heroin landed in New York has risen by 150 percent over the last decade, reflecting both the increased demand in the United States and the greater risks involved in smuggling. But the rising level of seizures still represents only a small fraction of the illicit flow. "The international heroin market almost certainly continues to have adequate supplies to meet the demand in consuming countries," the survey observes.

Economics is an obstacle to efforts to eliminate poppy cultivation. The price paid to the farmer for opium is so small a fraction of the selling price of heroin that the traffickers could easily absorb increased costs for opium. Prices for raw opium have remained relatively stable over the last decade, suggesting that "the sources of supply have readily accommodated to increases in demand without encountering higher unit costs." Another obstacle to elimination is that the opium poppy can be cultivated in many regions of the world. The major producer of illicit opium is the Golden Triangle, which was the source of an estimated 700 tons in 1971. Another 220 tons or more were produced in India, Pakistan, and Afghanistan. Illicit Turkish production

Fellows Program at Academy

The National Academy of Sciences (NAS) is establishing a program of fellowships whose purpose is to give younger scientists, particularly women and members of minority groups, the opportunity to study the world of science policy-making.

With the initial aid of a 3-year grant of $250,000 from the Alfred P. Sloan Foundation, the academy will support eight in-house fellows a year. Criteria for selection are a Ph.D. degree or its equivalent and 5 to 10 years of experience in science, social science, medicine, or engineering.

Four fellows are expected to be chosen some time this year, each to spend up to 1 year at the academy. Each is expected to have some project in mind that is related to the interests of the academies of science or engineering, the National Research Council, or the Institute of Medicine. They will be given office space, stipends of up to $25,000 a year, and opportunities to participate in the work of the multitude of committees and boards that give science policy advice to the government. They will be given free rein to pursue their own projects, and to use the prestige of the academy to summon the resources of experts from around the country. Most of the fellows are expected to come from academic settings, but the program is also for the benefit of researchers and administrators from government and industry.

According to John Coleman, NAS executive officer, the idea for this program has been kicking around for a decade. The academy conducted a similar program of research fellowships in the 1930's, but it was abolished when the government went into supporting researchers in a big way after World War II.

Adolph Wilburn, an educational planner on the NAS staff, will run the new program. Wilburn says the idea received its real impetus at a meeting of minority group scientists and engineers which the academy called in early 1971. The conferees wanted a program specifically geared to minority group members but this concept has been watered down somewhat.

NAS officials don't like to get too specific because they say they are still feeling their way along in the matter, but the idea seems to be to give qualified scientists the experience needed to assume administrative and advisory posts—or, as Coleman says, "to get into the national swing of things." A member of a university science faculty, for example, might be appointed dean or provost after his stint at NAS. Wilburn, in particular, sees the fellowships as a way to get minority types into government decision-making by giving them the expertise necessary to qualify for sitting on advisory boards.

Wilburn says nominations are now pouring in, but there is no word as yet when the first fellows will be chosen.—C.H.