

Abortion Gets Its First Thorough U.S. Airing

over to the government one percent of his annual income for every \$3,000 borrowed. Thus the burden of cost shifts from parent and society to the student who borrows what he needs and pays back what he can. Although low-income individuals would never repay the full amount, highly paid workers would make up the difference.

The panel estimates total bank loans at less than \$1 billion during the first year, with volume rising sharply as the idea of borrowing catches on. If every undergraduate were to borrow enough to pay the full price of attending college, the Bank would have to lend about \$7 billion the first year.

Supporters see the Ed Op Bank as a miracle drug for the ills of education, race relations and poverty, granting colleges the right to charge a fair price, giving poor students freedom to choose their school and eliminating prejudicial barriers Negroes often face when asking for money from wealthy but conservative banks. Putting money directly in the hands of the students instead of institutions might also lead to improved educational quality, they say, giving students a solid platform from which to bargain with administrators, even to the point of forcing colleges into innovations and improvements in order to attract a talented student body. Theoretically, quality would also go up, because if operational costs were met by tuition and fees, government and foundation grants, as well as endowments, could go to better programs of study.

Opponents of the Bank charge that it is designed solely to preserve the elite private colleges which, in spite of blue chip endowments, are operating in the red. They are quick to point out that all seven members of the educational panel, appointed by Presidential science advisor Dr. Donald F. Hornig, come from private schools including Harvard, MIT and Brown. The net effect of the Bank, according to spokesmen for the public colleges, would be to force their institutions to raise tuition. They feel that although the panel says that move would have no effect on legislative expenditures for education, the political reality is that state legislatures would back away from educational spending, thus leaving colleges no better off than they are now, but forcing students into life indebtedness.

Generally, the plan has received little enthusiastic support in Washington. A spokesman for the U.S. Office of Education says the idea "is being floated now just to see what happens." Little has. Congressional interest in college financing is being spurred by middle income families whose screams for help are getting louder and louder, but so far, at least, no excitement for the Bank has been shown on Capitol Hill.

The centuries-old prohibition against abortion would appear to be crumbling before the combined force of the sexual revolution, the world population crush and advancing knowledge of genetics. England passed a new law this month, following Scandinavia, Eastern Europe and Japan to a more liberal abortion practice. In this country, two states recently adopted a law broadening slightly the grounds for abortion; others will probably follow suit (SN: 6/3).

But the religious objection to destroying any form of human life has still to be reckoned with, in the United States at any rate. In Washington, D.C., at the International Conference on Abortion, the subject received its first thorough U.S. airing this month, and the religious objections were much in evidence.

It was an academic-intellectual-ethical airing, with the emphasis on the ethical. On the conference's final day, in open session, debate flowed between the theists and the humanists—one defending the fetus' right to life; the other urging the right of the already born to protect themselves against unwanted pregnancies.

Sponsored by the Joseph P. Kennedy Jr. Foundation and the Harvard Divinity School, the conference drew together priests, ministers, doctors, lawyers and social scientists. Predictably, the meeting produced no consensus or resolution. But it did open up the question of abortion.

"It made the unthinkable thinkable; the unspeakable speakable," says Dr. Christopher Tietze, a medical director at the Population Council in New York and a strong advocate of open abortion, or abortion on demand.

To some extent, says Dr. Tietze, it is now possible to discuss the issue "without questioning the other fellow's intelligence and moral integrity or calling him names." But, he added half-seriously, the debate shows that "most of the other participants have no answers."

Facts on abortion in the United States are few. What facts do exist hint at the need for new answers.

There are about 10,000 legal therapeutic abortions performed yearly and anywhere from 200,000 to 1.2 million illegal abortions, which means the law is seriously out of phase with practice.

Of those 10,000 legal operations, about 93 percent are done on whites, according to an 11-year New York survey, and money is the key. In short, the rich get abortions for health reasons, while the poor get more children.

"If you're middle income or high

income and you're white, you can get taken care of," says Dr. Mitchell I. Ginsberg, commissioner of New York social services. "But if you're poor and you're Negro or Puerto Rican, you're not going to be taken care of. . . . We ought to be honest about it."

But if the Negro woman suffers from abortion laws, she also suffers at the hands of the illegal abortionist.

More than 90 percent of the deaths from illegal abortions are Negro, though authorities believe whites, most of them married women, get by far the majority of criminal abortions.

Many of the advanced nations have already liberalized their laws. In Eastern Europe and Japan, the practice is open and available upon request. Scandinavian countries exercise more control, but nevertheless will often allow an abortion to the poor, the unwed, the woman pregnant through rape, and to the mother in danger of bearing a seriously defective child.

Actually, Scandinavia is considerably more conservative than is commonly believed. The number of legal abortions per 100 live births is between three and seven. In Eastern Europe and Japan the figure ranges between 30 and 140. At the higher estimate of U.S. illegal abortions, the country has 20 to 25 per 100 births.

Two weeks ago, England joined the ranks with a new law, more restrictive than the others, but still more liberal than any under consideration in this country. Besides allowing abortions in the case of rape, substantial risk of a seriously deformed child, or danger to the mental and physical health of the mother, the English statute adds a key clause: The health risk may take into account the mother's "total environment."

Such latitude for judging the mother's social condition is so far unknown in the United States.

Two states have now adopted a model abortion code, drafted by the American Law Institute and resembling the first three points in the English law. Other states will probably follow.

Yet, that law is a very conservative one. It makes only a "mild compromise" with antiquated, 19th century views, says Dr. Louis B. Schwartz, law professor at the University of Pennsylvania and a drafter of the model code. Dr. Schwartz favors broader grounds for abortion, based on the mother's "well-being," rather than her health alone.

At most, says Dr. Bayless Manning, Dean of the Stanford University Law

School, the U.S. model code will legalize 15 percent of the abortions that are now illegal, leaving thousands, perhaps a million, abortions yearly in the criminal category.

There is a "deep and abiding instinct" in this country to make things criminally offensive and to imbed moral codes in criminal law, says Dr. Manning. The two are just not the same. Unless a criminal statute is backed by a central core of solid, public support and practice, "you get exactly what you've got in the case of abortion," he says. "When an entire community is operating a still, revenueurs have a difficult time."

Dr. Manning's implicit suggestion that abortion be removed from the criminal law is finding an unexpected reception in Catholic quarters. Some priests at the conference expressed a willingness to see all laws withdrawn and abortion made a matter of conscience.

"There is an argument to be made," says Father Robert F. Drinian, Dean of Boston College Law School, "that law should withdraw from this area altogether." In his opinion, only two choices are open—current strict prohibitions in which the only cause for abortion is to save the mother's life, or no laws at all governing abortion during the first 26 weeks of gestation (abortion is generally not possible after 26 weeks).

Any grounds between those extremes get the state into the business of deciding who shall live.

In fact, one of the main Catholic attacks during the conference centered on the issue of the defective fetus. Warnings such as "if this class of people can be done away with, where will it stop?" were common. "Why not wait and see" if the child is defective before "exterminating him?" asked one participant, a California law professor.

In an emotional address to the conference, Mrs. Sargent Shriver, sister to the late President Kennedy, raised a nightmare vision of an "institute of death—an institute where experts of no race, creed or color would scientifically determine who has the right to live, where and for how long."

"Does this sound like a bad dream? . . . It is already a visible preview of the world to come."

Mrs. Shriver acknowledged that one of the conference's aims was to re-apply moral and theological opinion in areas increasingly left to scientists—such as abortion.

Not surprisingly, many observers called the meeting male-dominated and slanted toward the prevailing Catholic antiabortion position. There was truth to both charges. Religious bias was evident in the careful selection of the 48 invited authorities. Both representatives

from England for instance, were strong opponents of their new law, which most closely resembles the U.S.'s. The only invited geneticist eloquently opposed abortion on the basis of a possible defective fetus. "In no way can we judge that a given manifestation of life should not appear," said Dr. Jerome Lejeune, well-known French geneticist.

Finally, the social sciences were underrepresented—several participants in those fields came from religious schools or backgrounds.

Ironically, the conference may have served to crystalize some liberal opinion. "I didn't realize I was in favor of open abortion laws, until I sat down to write my paper," said Dr. Natalie Shainess, psychiatrist and lecturer at the Columbia College of Physicians and Surgeons.

Women were obviously clearly underrepresented—only three of the 48 were women—but for a reason. Few women hold academic posts in any of the disciplines represented—medicine, law, the social sciences and theology, and the sponsors simply could not find enough eminent females to balance debate. ♦

16 PAPERS ON MOSSBAUER

Test Techniques Emerge for Chemists

Chemistry has entered an age of instrumentation; the number of new instruments designed to measure chemical properties is burgeoning, as seen at the annual convention of the American Chemical Society in Chicago last week.

One analytical method just coming into its own is the so-called Mossbauer effect, which uses the characteristics of radioactive material to determine chemical conditions around the nucleus of a test atom. Some 16 papers were presented at Chicago dealing with the results of Mossbauer analysis alone.

The Mossbauer effect concerns the gamma radiation put out by radioactive nuclei; the gamma rays come out at a level of energy which depends upon the chemical environment—the kind of molecule in which the radioactive atom is bound. As a test technique, it depends on the relationship between emitted and absorbed radiation.

The gamma rays can be absorbed by atoms in another substance, but only if the absorbing atom has the same energy level characteristics as the source.

Radioactive gold mixed with platinum, for instance, gives off gamma rays at an energy level that an absorber made of gold cyanide can't accept.

But if the radiation source is physically vibrated, the energy of the gamma rays given off is increased. At a

particular frequency of vibration the gamma rays will have just the right energy to be accepted by the absorber. Then, if a gamma ray detector is located behind the absorber, the detector will show a low point at that frequency.

From the frequency of vibration, chemists can tell the added energy needed to match the absorber's level, and from this they can deduce the density of electrons near the nucleus and the magnetic and electric fields at the nucleus.

The Mossbauer effect is useful only for atoms that can be made radioactive, which somewhat limits its application.

Another tool, applicable to all elements, is photo-electron spectroscopy, a technique developed by Dr. Kai Siegbahn of the University of Uppsala, Sweden.

In this process, samples are irradiated with X-rays having enough energy to break loose electrons from the inner rings of the sample atoms. The binding energy of the electrons depends on the chemical environment of the atom.

The amount of energy added by the X-rays, which is known, goes partly to free the electron, overcoming the binding energy, and partly to accelerate the electron once it is freed.

To compute what the binding energy is, then, the energy of the electron has to be measured, and this is done by using an electron spectrometer.

According to Dr. David A. Shirley, of the University of California's Lawrence Radiation Laboratory, who reported on the method, one thing that has held it up is the lack of electron spectrometers. Most of the few available are at large laboratories and are used to measure very high energy electrons.

But, he said, for the photo-electron work the energy levels are much lower, so smaller, cheaper machines can be built and used.

Dr. Shirley also described a nuclear effect recently observed in niobium which could be used to determine some chemical qualities of that element and others.

Drs. John Cooper, J. N. Hollander, and J. O. Rassmussen, also of LRL, found that the decay rate of radioactive niobium-90 could be changed by changing the element's chemical environment. Between niobium metal and a complex fluoride compound of niobium, the decay rate differed by as much as four percent.

Since the decay rate was affected by the electron density at the nucleus, and this in turn is affected by the chemical bonding of the compound, the technique is useful in studying the nature of chemical bonds in certain cases. ♦