

was agreed that ALG should be given to all future heart transplant recipients.

Lymphocytes are white blood cells which play a central role in rejection reactions. Such reactions are a form of the mechanism of immunity with which the body fights disease organisms. Lymphocytes collect and multiply around foreign tissue, eventually infiltrating it and, it is generally believed, destroying it.

Measures used to fight this reaction in the first heart transplants consisted of drugs such as the steroid, prednisone and Imuran. These drugs suppressed not only the lymphocytes, but all of the immune response. Thus the patients lay in danger of massive infection by foreign organisms. The first recipient, Louis Washkansky, died of infection.

What is needed, therefore, is something that will suppress lymphocytes but leave the rest of the immune mechanism alone. This ALG does. It is produced by injecting human lymphocytes into horses.

The horses react with their own immune response to the foreign human cells, producing antibodies (globulin)

which destroy these invading cells.

Some of the horse's blood is withdrawn when this antibody production is at its peak. The globulin is isolated and injected into patients, where it continues with its work of destroying lymphocytes. It is highly selective and won't bother any other cells.

ALG has been used in kidney and liver transplants, also with some apparent success. It might be an answer, or at least a substantial part of the answer, to the problem of rejection that plagues all forms of transplants. But it is hard to evaluate ALG when it is only part of a shotgun therapy that includes everything from "steroids to prayer," as one immunologist puts it.

Furthermore, no one knows the effect of long-term suppression of lymphocytes, which presumably play a part in battling infections as well. And studies in Holland indicate that different batches of ALG may have different effects on the retention of grafts in animals.

Even so, ALG appears to have improved the heart transplant batting average. ◇

ing to rely on old state hospitals for inpatient beds—a situation which hampers innovative therapy.

Treating the bulk of the nation's mental inpatients—about one million a year—at home would circumvent this problem to a great extent.

Departure from traditional hospital practice, however, is likely to be spotty.

The National Institute of Mental Health, which funds the new community mental health centers, does not directly establish treatment methods. But as applications for new grants come in, the NIMH can decide to fund those using the latest techniques. Dr. James Lieberman, chief of the center for studies in child and family mental health, calls the Denver work very promising. He says he does not think the principle of home therapy needs further support before it can be widely implemented. NIMH is not likely to fund those applicants who are unaware of the latest research, he says.

Some patients, however, must be hospitalized if only because they lack a family. Dr. Langsley believes that "anyone who would ordinarily be put in the hospital and has a family willing to participate in therapy can be treated at home." The criterion, he says, is not how severe the patient's symptoms are, but how much family support he has.

Some of the most difficult patients to handle are those with prior hospital experience, adds Dr. Langsley. Their resistance to home treatment is only surpassed by the resistance of their families.

GRANTS

Congress waves the cane

Rebellious college students still face an angry Congress—and an especially angry House of Representatives.

When Congressional anger flared last May in response to riots on several campuses (SN: 5/25, p. 493), there were predictions that, given time, less stringent second thoughts would prevail. Recently, in amending the Higher Education Amendments Act, the House showed that its second thought was as harsh as its first.

In the bill, as the Senate had earlier passed it and as the House Education and Labor Committee recommended it, was a provision that gave colleges and universities authority to withhold Federal funds from students who, in the judgment of university authorities, "willfully refused to obey lawful regulations or orders. . . ." This was a softening of earlier language on the matter which the committee thought the House would now accept.

But on the floor, Representative William J. Scherle (R-Iowa) offered an

MENTAL ILLNESS

Treatment goes home

"Mamma has gone crazy again—she's schizophrenic you know." And into the hospital goes mamma where she stays until the acute phase of her illness has passed, usually a matter of weeks.

One goal of modern psychiatry is to make that stay in the hospital as short as possible. The harmful impact of long-term hospitalization has been well established over the past decade, and since mental illness is not a constant condition, but episodic, patients can be kept home and functioning most of the time.

Now it appears that the bulk of mental patients need never go to the hospital at all, even during acute bouts of hallucinations and delusions.

Schizophrenia is no longer an excuse for hospitalization. Nor is the severity of symptoms alone in most cases a sufficient reason for the patient or his family to fall back on hospital care.

Some leaders in mental health have suspected that home treatment was as good and perhaps better than hospitalization, but until recently they have lacked solid evidence.

The first scientific validation came last year when a New York study of 55 schizophrenics indicated that three-fourths of them could be kept out of the hospital altogether with drugs and simple supportive therapy from visiting nurses.

The home treatment did not delay hospitalization, but replaced it. Affir-

mation of this principle on a broader scale now comes from a Denver study still in progress.

The Denver investigators at the University Medical Center, led by Dr. Donald Langsley, stopped 150 patients at the point of hospital entry and returned them home for a type of family crisis therapy.

The patients, pulled out on a random basis, included a full range of mental illnesses, from suicidal depressives to hallucinating schizophrenics. All were candidates for the hospital and all were successfully treated at home with members of the family participating.

About 20 percent of the first 75 treated in this manner eventually entered the hospital over a six months period. But the re-admission rate for hospital treated patients was the same, and they stayed longer. Those initially treated at home spent only a third as much time in the hospital as the others, indicating for the first time that home therapy may actually be preferable to hospitalization for even the most severely mentally ill.

This kind of evidence is expected to have major impact on the field of mental health. Community centers are experimenting with a wide range of treatment modes, from crisis intervention to day-hospitals and home care. There is a good deal of confusion over which patients to hospitalize and for how long. Some of the new centers are hav-

amendment to make withdrawal of funds mandatory from students who commit such offenses.

Opponents of the amendment saw in it a danger to academic freedom and university autonomy, and cited a protest by Dr. Grayson Kirk, president of Columbia University. To which Representative Otis G. Pike (D-N.Y.) replied: "I hardly recognize Grayson Kirk as the national expert on how to properly regulate student behavior."

The House accepted the amendment, 259-147, on a roll-call vote.

A House-Senate conference on the differences will be held in the fall.

Another provision of the bill forbids loans or grants for three years to any student convicted in court of crimes connected with student unrest and obstruction.

DISCOVERED FISSION

Otto Hahn, 1879-1968

Otto Hahn, codiscoverer of nuclear fission, died on July 28 in Göttingen, Germany, at the age of 89.

In 1938 Dr. Hahn and Dr. Fritz Strassmann, working in the Berlin suburb of Dahlem, succeeded in identifying the radioactive products of an experiment in which uranium nuclei were bombarded by neutrons. The products were isotopes of elements that had about half the atomic weight of uranium, implying that the uranium had split about in two. Being chemists, Drs. Hahn and Strassmann were reluctant to say so flatly because the physics of the time refused to allow the possibility.

It was a former associate of Dr. Hahn, Dr. Lise Meitner, then a refugee in Sweden, and her nephew, Dr. Otto Frisch, who drew the conclusion and first calculated the energy that should come out of uranium fission. Dr. Meitner told the news to Niels Bohr, who brought it to the United States. Physicists in the United States began to experiment immediately, but it was not until 1942 that the Government became heavily interested and set up the Manhattan Project.

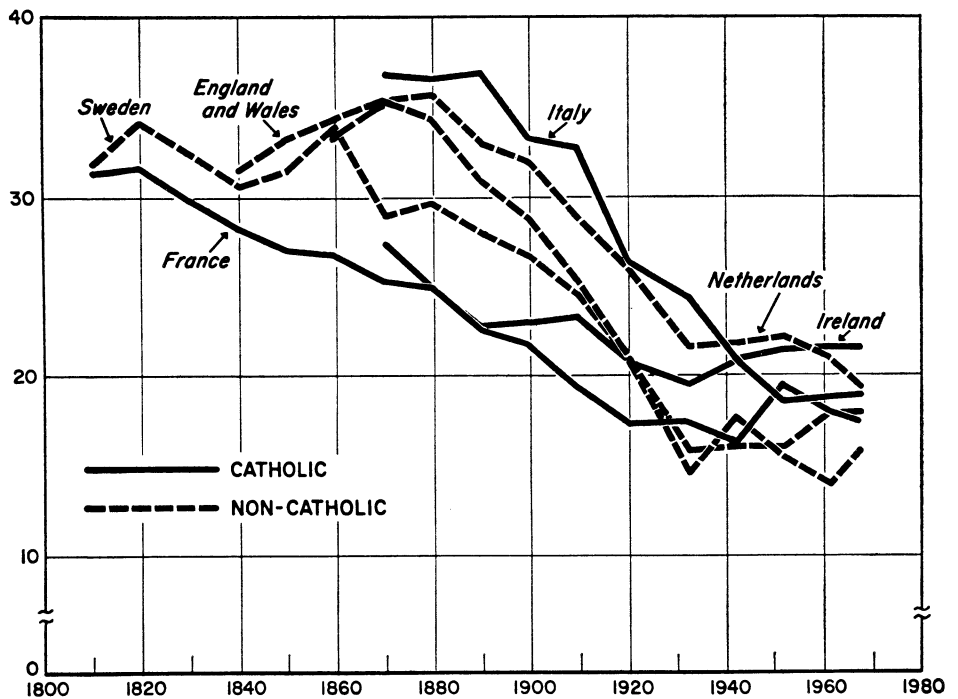
Some observers credit Dr. Hahn with successfully obstructing German efforts to build a nuclear bomb. In recent years he was noted for his opposition to war and to nuclear war in particular.

From 1948 to 1960 Dr. Hahn served as president of the Max Planck Society, which manages a chain of research institutes all over West Germany.

Dr. Hahn received the 1944 Nobel Prize in Chemistry—which was actually awarded in 1945 and collected by him in 1946. In 1966 he shared the U.S. Atomic Energy Commission's Enrico Fermi Award with Drs. Meitner and Strassmann.

RHYTHM METHOD

Birth, the Pope and probability



Population Reference Bureau

European birth rates halved in Catholic and non-Catholic countries alike.

Soon to be published is a most discouraging report on the rhythm method of contraception, the only one historically permitted by the Roman Catholic Church. Even that method—abstinence during fertile periods—was frowned on by Pope Paul VI in his message outlawing any mechanical or chemical means of birth control.

Dr. Franklin T. Brayer, director of the Center for Population Research of Georgetown University in Washington, D.C., which has just completed a study of United States housewives, says some couples can make the rhythm method succeed, but it is not a reliable method of birth control.

Dr. Thomas K. Burch, director of the demographic division of the center, was one of the many disappointed members of the Pope's birth control study commission. The advisers were overruled by Pope Paul.

The statistics would discourage any couple hoping to space their children by rhythm. If they want to have children two years apart, they are limited by laws of probability to having sex relations twice a month. If they want to space them four years apart they are confined to sexual intercourse once a month. The method can fail in 40 of 100 women.

Three reasons for failure, one authority suggests, are:

- The possibility of inheritable factors for irregularity in the menstrual cycle;

- Inheritable differences in the sex drive;

- The fact that some women may ovulate out of cycle, after sex relations.

The Population Reference Bureau, however, declares that a misconception persists about soaring birth rates in Roman Catholic countries. The bureau says birth rates are not soaring anywhere in the world and that Catholic nations have achieved some of the lowest rates on record.

Any implication that these nations have been concentrating on the rhythm method should not be accepted, however, since Hungary is nominally Roman Catholic but has legal abortions and the lowest birth rate in the world—13.6 babies per 1,000 population.

The decline in France, another nominally Catholic country, was caused by "the prevention of births within marriage by contraceptive means," according to Alfred Sauvy, former director of the French National Institute for Demographic studies.

In Catholic Latin America, with its high birth rate, the church's "control over sexual behavior within families is usually overrated." The 11 nominally Catholic countries in Europe have an annual birth rate of 18.1 per 1,000, compared with 18.0 for 15 non-Catholic nations.

In the United States the reaction to the Pope's encyclical was such that no immediate increase in Roman Catholic births may be expected.