



Bell Telephone

STYRENE MEETS THE LASER—Distilled monomer styrene is being irradiated with light from a pulsed ruby laser, which converts it into a polymer. Scientists Yo-Han Pao (left) and Peter Rentzepis of Bell Telephone Laboratories in New York are among the first to use laser light to produce a specific chemical reaction.

MEDICINE

Thalidomide Aids Graft

Thalidomide aids skin grafting in mice, indicating to scientists that it had an "immunosuppressive" effect on pregnant women, thus preventing abortion of the deformed babies.

► THALIDOMIDE, the drug that caused so many deformed babies when taken by pregnant women, could still have useful effects if given at the proper time for specific treatment.

A team of London physicians reported in the *British Medical Journal*, Sept. 18, 1965, that thalidomide caused skin grafts to last longer in mice than other drugs or no drugs at all.

The drug could have an immunosuppressive action, or cut down the resistance to foreign tissue that causes rejection of skin and transplanted organs.

Thalidomide is less toxic than other immunosuppressive drugs, the researchers found. Compared with methotrexate and mercaptopurine, commonly used to overcome resistance to transplants, thalidomide worked better in experiments with mice.

Thalidomide was not only given to the donor and recipient of skin grafts, in some cases the skin to be grafted was soaked in it for three hours.

Although the exact way in which the drug prolonged skin grafts was not clear, the investigators believe that it modifies the donor skin antigen.

If further experiments prove that thalidomide has these properties, they could help explain why deformed babies were carried through full-term pregnancies.

The fetus may be regarded as a "homo-

graft" upon the mother, which for reasons that are only poorly understood, escapes the usual fate of a homograft and remains unrejected, the researchers said.

"It seems possible, however, that some, perhaps most, early spontaneous abortions might be a specialized example of homograft rejection," the researchers noted.

Other research has shown that since a large number of aborted fetuses are abnormal, this or some other nontoxic immunosuppressive drug might permit a malformed baby to be born that otherwise would have been expelled earlier.

Reporting the mice-grafting study were Dr. K. Hellmann, head of Cancer Chemotherapy Unit, Imperial Cancer Research Fund, London, with D. I. Duke and D. F. Tucker of the same unit.

• *Science News Letter*, 88:211 October 2, 1965

MEDICINE

Device Controls Cancer Pain Without Drugs

► FIFTY CANCER PATIENTS in Boston have tried out an electronic "pain box" about the size of a package of cigarettes, which relieves the unbearable suffering of spreading cancer with a flick of the switch.

So far, it has been necessary to implant electrodes at the base of the brain where

the thalamus relays sensation, but investigators are now working on a method to make the pain box work without wires or the surgically implanted electrodes in the center of the thalamus.

Such a box would work by electrical induction, using wireless signals to implanted coils.

Dr. Frank Ervin, director of the Stanley Cobb Laboratories for Psychiatric Research at Massachusetts General Hospital, in collaboration with Dr. Vernon Mark, director of neurosurgery at Boston City Hospital, reported their invention in *Medical World News*, 6:48, 1965.

For the past 12 years, surgeons have been destroying regions in the thalamus of patients with terminal cancer, but the pain box does not destroy brain tissue. While morphine alters the patient's reaction to pain, electrical stimuli block pain and, by doing so, eliminate reactions.

• *Science News Letter*, 88:211 October 2, 1965

MEDICINE

Inherited Heart Defect Kills Infant Grandson

► FOR THE FIRST TIME a grandfather and his grandson have both been proved to have a blocked pulmonary valve, a type of congenital heart defect. The boy, however, died three days after birth, while the grandfather has lived for more than 62 years.

A team of three physicians at the Maricopa County General Hospital at Phoenix, Ariz., pointed out that any kind of congenital heart lesion can vary in severity, and the present case illustrates the point very clearly.

Although the grandfather had the classic findings of mild to moderate pulmonary stenosis (constriction of the valve located at the exit of the right ventricle of the heart), it caused him no particular difficulty. He was admitted to the hospital with pain in the left side of his chest, but was dismissed after tests and has remained well.

The grandson, however, had the most severe form of the defect, which is known as pulmonary valvular atresia. This means failure of development of the opening.

Oxygen, digitalis and diuretic treatment proved to be no help to the baby, and he died before any further therapy could be given.

Autopsy showed marked increase in the size of the right ventricle, along with the closed valve at the exit.

The researchers pointed out that most "authors agree that sex-linked inheritance cannot explain familial cases of congenital heart disease."

None of the grandfather's children or other grandchildren have been affected with the condition, which makes dominant or sex-linked recessive inheritance unlikely. A recessive mode of inheritance would be a more reasonable assumption, the researchers stated.

Drs. Jerome C. Robinson, Hugh B. Hull and William J. Rappoport, all of Phoenix, reported the findings in the *New England Journal of Medicine*, 273:680, 1965.

• *Science News Letter*, 88:211 October 2, 1965