

MEDICINE—AMA MEETING

Chimp Supply Meager

Chimpanzees seem to be the best source of animal transplants, but the transplant procedure is still experimental and the supply of chimpanzees insufficient—By Faye Marley

► THERE WILL NOT be enough chimpanzees to provide kidneys for human transplant needs if the animals' organs turn out to be acceptable to humans.

Hopes for success in such operations have been raised by recent transplants at Tulane University, New Orleans. One human patient is still alive after four months with a chimp kidney.

Chimpanzees are in extremely small supply, Dr. John P. Merrill of Harvard University and Peter Bent Brigham Hospital, Boston, said in San Francisco, and it is not likely that an adequate number could be brought from the narrow belt in Africa where they are obtained. The fact that mother chimps must be killed before their young can be captured further depletes the potential supply.

Dr. Merrill, who is a pioneer in kidney transplants, has performed 83 kidney transplants between humans. The non-identical twins whose transplant made medical history six years ago are still alive and in "excellent health," Dr. Merrill told SCIENCE SERVICE.

To Dr. Merrill the whole transplant procedure remains experimental. Only 18 of his 83 patients are still alive, and only 12 of them have been alive more than a year.

Statistics change from day to day, he points out, and it is unscientific to predict percentages of success.

He and his team have never used animal-to-man transplants, but he sees the chimpanzee as the most successful source of animal transplants, so far.

All patients who have had kidneys replaced by baboon organs have died after rejecting them. Although the Boston surgeon has no plans to try animal transplants to humans, he believes further experimentation along these lines is justified.

It is well known that immunity problems, including rejection of transplants and infection resulting because drugs have destroyed the body's ability to resist disease, have been unsolved, along with the problem of wound healing even when surgery has been perfect technically.

Now Dr. Merrill reveals that a new concern has been added. The person who receives a transplanted kidney has been found to develop the same disease in the newly placed organ that caused him to lose his bad kidney in the first place. The battle against nephritis, or kidney inflammation, must still be overcome.

The artificial kidney machine that provides peritoneal dialysis is only a stop gap, Dr. Merrill said. There is more to kidney function than irrigation. The kidney has red blood cell functions. It affects the blood pressure and the body's fats and carbohydrates.

One man went without kidneys for fifteen months through the use of hemodialysis in which blood circulates through an artificial kidney, but Dr. Merrill's team has now transplanted one of the kidneys of the man's mother into his body to give him needed functions.

Kidney banks, made possible by freezing, probably will not be established for at least ten years, the Boston surgeon believes. He hopes that by that time nephritis treatment will be perfected.

It is easy to freeze spermatazoa, he said, but the kidney is too complex an organism for successful storage at this time.

Among relatives other than identical twins who are known to accept each other's tissue, transplants from parent to child have been the most successful at Peter Bent Brigham Hospital. Cadavers so far have proved to be the poorest source of transplant organs.

Careful screening of relatives, including their reasons for wanting to donate a kidney, is done at the hospital, but even so, Dr. Merrill is not satisfied that the problem of moral responsibility has been solved.

If we could say to a man's brother, who is a prospective donor, that giving up his

healthy kidney will be definitely only one-tenth of one percent risk to his own life, and that there is a 98% chance that the brother who gets the healthy kidney will definitely be alive in five years, the problem of moral responsibility would be simple.

"But we can't do that," he said.

Among the 18 papers on transplants presented at the meeting of the American Medical Association, many were on successful kidney transplants. One concerned an implantable artificial lung made of teflon and another the metabolism of the transplanted heart.

• Science News Letter, 86:3 July 4, 1964

Laser Restores Sight

► INTENSE LASER LIGHT promises to restore sight to many otherwise hopeless cases of fading vision through a simple series of "office calls."

Successful use on 25 patients was reported at the annual convention of the American Medical Association in San Francisco by Drs. Milton Flocks and H. Christian Zweng of the Stanford Medical Center, Palo Alto, Calif.

They used an optical laser photocoagulation apparatus to "spot weld" torn retinas back to the surface of the eyeball.

The treatments were given in the doctor's office. The high-energy light beam was used in multiple exposures of the eye to laser light for 500 micro-seconds each.

No anesthesia is necessary and the patient usually cannot even perceive the treatment because it happens so fast.

• Science News Letter, 86:3 July 4, 1964



ITT

PERFECT SYNTHETIC CRYSTALS—Perfectly formed quartz crystals, which would take nature three million years to produce, are formed artificially in three weeks under high temperatures and pressures by Standard Telephone and Cables Ltd., a British affiliate of International Telephone and Telegraph Corporation.