

SURGERY

Mothers' Skin Grafts Better Than Fathers'

► **MATERNAL SKIN** grafted onto newborn rabbits survived on the average about 45 days, compared to an average of 26 days for skin grafted from the fathers, a Czechoslovakian scientist reported in New York.

Dr. Peter Demant of the Institute of Biology and Genetics, Prague, told the Seventh International Transplantation Conference at the New York Academy of Sciences that it is possible the exchange of antigenic material between mother and fetus could account for the difference.

The tolerance for maternal grafts is quickly lost, however, for maternal skin grafts on three-day-old rabbits lasted an average of only 27 days.

Dr. L. David of the University of British Columbia, Vancouver, said that organ transplants are successful between chickens of different species when the cells of the donor make a chemical called an isoantigen in the same way as do the cells of the recipient.

Dr. David and his co-workers have worked out a simple technique, using a fluorescent chemical, for labeling antibodies. Such tests may make it easier in the future to match human donors and recipients before undertaking organ transplantation.

Dr. Joseph E. Murray, pioneer in human kidney transplantation, and Dr. Richard E. Wilson, both of Peter Bent Brigham Hospital, Boston, said they were encouraged by discoveries that have contributed to successful organ transplants. For example, internal organs, such as kidneys, lungs and liver can be transplanted successfully from one human being to another and between animals of the same species, even when skin grafts cannot be transplanted effectively.

Ways of finding organ transplant donors whose cells resemble those of persons needing transplants will eventually lead to success in overcoming the rejection problem, researchers believe.

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ENTOMOLOGY

Animals Are Affected By Pesticide Residues

► **PENGUINS** in Antarctica, elk on the high slopes of North America, oysters in Chesapeake Bay, the owl in your attic—all have one thing in common: traces of DDT or some other lethal chemical intended to get rid of unwanted insects and other pests.

In man's effort to kill the insects and pests that feed on his crops and damage his houses he has also affected many useful wild creatures.

Ducks, bald and golden eagles, deer, perch and shellfish are only some of the animals throughout the world in whose body tissues pesticide residues have been detected, Dr. E. H. Dustman, director of the Patuxent Wildlife Research Center at Laurel, Md., told a symposium on scientific pest control being held under the

auspices of the National Academy of Sciences and the National Research Council.

A vital new program has been set up to check the extent of pesticide residues such as DDT, dieldrin, heptachlor epoxide and benzene hexachloride. This National Pesticide Monitoring Program will follow the effects of the chemicals on fish and birds.

These animals will serve as "indicator species" Dr. Dustman said. Indicator species are animals which are at or near the top of food chains so that residues found in their bodies will serve to summarize or reflect residues found at lower levels in the food chain network.

Pesticides used to control harmful insects are washed into streams or lakes where they are absorbed by tiny plankton plants which are eaten by small fish which are eaten by bigger fish which are eaten by birds, which in turn may be eaten by other creatures.

For example, E. G. Hunt, California Department of Fish and Game, Sacramento, described startling results at Clear Lake, Calif., where pesticides were used to control gnats. Residue levels of the pesticides in the lake area after 13 months showed 10 parts per million in plankton, 903 parts per million in smaller fish, 2,690 parts per million in carnivorous fish and 2,134 parts per million in the fat of fish-eating birds. This represents a 100,000-fold increase of harmful chemicals in fish-eating birds.

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MEDICINE

Two New Rabies Vaccines Reported From Canada

► **TWO NEW VACCINES** against rabies are reported at the University of Toronto's Connaught Medical Research Laboratories.

A "live" vaccine for animals is already licensed for sale, but the "killed" vaccine for humans must pass further tests before it can be widely used. Researchers say that the human vaccine promises to be far more satisfactory than any of the rabies vaccines now being used, and that the animal type offers a longer and more certain immunity than those now on the market.

The new human vaccine is the culmination of years of work by Dr. Paul Fenje and his co-workers. The research team grew the virus for the vaccine in controlled laboratory conditions in cultured hamster kidney tissue. It was from viruses grown in this way and then recultured in pig kidney cells that Dr. Melvin Abelseth of the Laboratory's veterinary division produced the live vaccine for animal use.

The trouble with all rabies vaccines used since Louis Pasteur's time is that they have been made from viruses grown in animal brain tissue, the investigators explain. It is often impossible to separate them later from large amounts of fatty substances and protein on which they were nourished, and sometimes these impurities produce allergic reactions at the site of inoculation. Occasionally they can damage the central nervous system.

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IN SCIENCE

GENERAL SCIENCE

European Science Tours Open to U.S. Students

► **SCIENCE SERVICE'S** Science Clubs of America has arranged so that a limited number of students of the sciences aged 17 to 21 may participate this summer in London's Eighth International Youth Science Fortnight and a subsequent three-week European Tour.

The Fortnight will be held from July 27 to Aug. 10. The program will include lectures, demonstrations, seminars and visits to research and industrial establishments. Students from 30 different countries are expected to participate. The cost including accommodations and meals (but not including transportation to and from London) is 34 pounds (\$95.20).

The three-week European Tour starts a day after the close of the Fortnight. The participants will travel by boat to Brussels, then by bus to Strasbourg, Interlaken, Innsbruck, Vienna, Prague, West Berlin, Hanover, Amsterdam, Ostende, and return to London. Except in Prague and West Berlin, the party will be accommodated in youth hostels. This tour, London to London, extends from Aug. 11 to Sept. 2 and costs 44 pounds (\$123.20) including accommodations and most meals.

An advance deposit of three pounds (\$8.40) is required for each program. Students may participate in one or both programs. Transportation to and from London should be arranged directly with airlines.

Additional information and application forms will be sent upon request to SCIENCE SERVICE. Arrangements should be made directly with Administrative Offices of Science Fortnight, Worldfriends International Service for Youth, 308 Earls Court Road, London, S.W. 5, England. Applications and deposits must be received by June 30.

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ASTRONOMY

Supernova Discovered In Unnamed Galaxy

► **A SUPERNOVA**, a star that suddenly blazes forth to release in one second energy comparable to the sun's normal output for a billion years, has been discovered in a distant, unnamed galaxy.

News of the discovery by Prof. Leonida Rosino of the Observatorio Astronomico, Padua, Italy, was reported by the Smithsonian Astrophysical Observatory in Cambridge, Mass. Astronomers with telescopes sufficiently large to photograph an object of 15th magnitude will train them toward the constellation Ursa Major.

The supernova's exact position is 9 hours, 12.5 minutes in right ascension and plus 46 degrees, 58 minutes in declination.

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E FIELDS

TECHNOLOGY

Remote TV Camera Monitored by Head

► A REMOTE CONTROL television system that allows an observer to guide a distant TV camera with his head can help both nuclear engineers and astronauts.

Designed to supplement the remote control hands now used to handle inaccessible or dangerous materials, the system consists of a harness that is fastened on the operator's head, along with a camera and a viewing monitor.

As the operator moves an object with his remote "hands," he turns his head as he would if the object were directly in front of him. The harness transmits his movements to the television camera, which follows the object, and to the monitor, which moves to keep itself in the operator's field of vision. The system was developed at the Argonne National Laboratory, Argonne, Ill.

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SOCIOLOGY

Many Worry About Population Explosion

► A MAJORITY of United States citizens believe population growth to be a serious problem in this country.

More than half the U.S. Catholics think their Church should change its position on birth control.

Exactly half the people believe contraceptive information should be available to unmarried adults.

And most Americans support birth control aid programs to foreign countries.

These are some of the attitudes tapped by Gallup Organization, Inc. in two national polls last fall. Results of the survey were announced by the Population Council in New York, for which the special poll, not part of the Gallup service to newspapers, was made.

Though 54% of the people are concerned about population growth, only one in five knows what the U.S. population is now. Far fewer know how fast it is growing. They tend to estimate growth as double or triple the actual rate.

Dr. Bernard Berelson, vice president of the Council who summarized the surveys, commented that with population "as with other such matters on the American scene general conviction outruns specific information."

Population growth is not the number one problem to the American public, however. Two other problems are placed far ahead in importance—crime and racial discrimination. Outstripping these as a subject of worry is international communism. Of the 3,200 people questioned, 71% think com-

munistism a more serious problem than world population increase.

Believed less serious is the threat of nuclear war. Nevertheless, two out of three placed the problem of war ahead of population.

As for the American attitude toward contraceptives, Dr. Berelson noted overwhelming support for supplying information to married couples. The count was 84% in favor. Interestingly enough, 50% voted in favor of providing this information to single adults. Very few people were undecided on the subject, said Dr. Berelson.

Catholics lagged behind others on these two questions, but only slightly. The same was true for every question analyzed along religious lines—except one. Apparently Catholics are more eager for a change in their Church's position on birth control than are members of other religions. This result may be explained by the deference some people show in criticizing another religion, said Dr. Berelson. In any case, far more than half the U.S. Catholics over 20 and under 60 favor a change.

Few differences in voting were found according to sex, except on the issue of distributing birth control information to single people. Men voted "yes" 57% of the time and women only 42%. Men were more likely to stress population in comparison with the other problems of crime, race, communism and war.

Education seemed to influence the answer to most questions. People with a grade school education voted "no" consistently more often than those with college training. However both groups strongly agreed that the Federal Government should give aid to states and cities for birth control programs.

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AGRICULTURE

Almanac Prediction Best for Cotton Crop

► THE "FARMERS' almanac method" of predicting climate appears to be useful after all.

Rainfall and temperature data going back 31 years helped produce last year the best cotton crop that farmers in Jones County, Texas, had ever seen. The Cotton Research Committee in Dallas developed a mathematical formula that showed the earliest planting in 1965 should be about six weeks later than usual.

A massive campaign was undertaken to spread the word to some 1,500 growers.

The resulting crop showed the largest number of usable middle grades of cotton in memory, said the Committee's director, Carl Cox, speaking to the National Cotton Council's annual research clinic in Pinehurst, N.C.

The most important result of the experiment was that the different qualities of fiber were distributed almost exactly as predicted in advance. Breaking strength was also within one or two percent of what the Committee predicted it would be.

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GEOLOGY

Rich Oil Shale Deposits Found in Northern Alaska

► OIL-RICH ROCK, called oil shale, has been found in the Brooks Range in northern Alaska, report geologists of the U.S. Geological Survey, Department of Interior.

The rock is exceptionally rich in oil and may yield up to 144 gallons of oil per ton. It also contains unusually large amounts of copper, zinc, molybdenum, vanadium, selenium and silver.

Oil shale is a type of rock formed as long ago as 600 million years. It is composed mainly of remains of plants and other organic material.

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MEDICINE

Birth Control Drug Tests Halted on 340 Women

► EXPERIMENTS with a new unmarketed birth control drug being tested on 340 women have been discontinued, at least until it is proved that it is not a cancer-causing agent.

"It is purely precautionary," an official of Merck Sharp & Dohme pharmaceutical manufacturers told SCIENCE SERVICE. "We found that two dogs had developed small localized breast cancer after being given 20 to 40 times the dosage given to humans, so we informed the U.S. Food and Drug Administration that we had stopped clinical tests."

Dr. James L. Goddard, new Commissioner of FDA, was asked, "Why were the 52-week studies on dogs not completed before giving the drug to humans?"

Commissioner Goddard, who has held his post for only one month, stated that one of his tasks will be to review such requirements.

The cessation of experiments with the Merck drug, called MK-665 by its developers, should not reflect on other oral contraceptive drugs now approved by FDA. MK-665 contains a new agent Ethynerone that affects changes in the womb lining before a fertilized egg can be imbedded. The drug is intended to prevent side effects sometimes encountered from contraceptives now in use.

Thirty dogs were involved in the MK-665 research. After six months, Merck said, 12 dogs were sacrificed for examination, but no cancer was found. The remaining 18 dogs were kept on the drug for another six months, after which 14 were found to be unharmed.

The 340 women are to be followed up by their family doctors to be sure there are no adverse effects as a result of taking the experimental contraceptive. So far, none has been found.

Further research will be done for a long time on lower primates, after which the safety of trials with humans will again be considered jointly by the pharmaceutical researchers and the FDA.

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