MEDICINE

Blood Donations Not Accepted From Everyone

➤ BLOOD DONATIONS are not accepted from everyone by such reputable organizations as the American National Red Cross and the American Association of Blood Banks.

People who have had jaundice or hepatitis, for example, can give blood, but it will not be used as whole blood. The red cells will be fractionated from the plasma so that only the serum albumin and gamma globulin are used, Dr. Allan S. Chrisman, director of the American National Red Cross Blood Program, told SCIENCE SERVICE.

A person who has had malaria will have to wait two years without a recurrence before his whole blood can be used. Fractions of his blood can be used in six months, however. No one who has been drinking is accepted as a blood donor.

Women should not give blood for a year after pregnancy, and for their own protection persons past 59 years of age are not accepted as donors.

If a person has had a bleeding ulcer or high blood pressure, the physician in charge of blood donations probably will advise against giving blood. Young people between the ages of 18 and 21 must have the consent of their parents before they donate. Anyone having a fever of even one degree or a common cold will not be accepted.

Commercial blood banks may not be as careful as they could be in refusing to accept blood donations. Dr. Chrisman said. Physicians are warned to be sure of their whole blood sources before infusing patients.

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BIOTECHNOLOGY

Deaf Hear Sounds On Single Frequency

➤ A METHOD of bringing sound to deaf people has been devised in Yugoslavia.

Dr. Petar Guberina, director of the Phonetics Institute of the University of Zagreb based his technique—the verbo-tonal method—on the belief that most deaf people can hear at least one sound frequency. But in normal speech that one frequency is drowned out by others.

To remedy this situation, Dr. Guberina designed an audiometer that filters words into their component frequencies and selects the one best understood by a deaf individual.

A 40-minute test with filtered sound demonstrates which frequency any one person hears best.

The Institute staff has developed a miniaturized filtering device which can be adapted to particular individuals.

Dr. Guberina's verbo-tonal method is considered promising by scientists in this country, and the linguist-phonetician has received a U.S. grant for his research.

However, Dr. Eugene Walle, an audiologist with the Catholic University in Washington, D.C., pointed out that the new technique probably would not convey speech itself. Perhaps distinctions between gross sounds such as ringing and clanging could be made, he told SCIENCE SERVICE.

In any case, the verbo-tonal method has great value in that it brings the deaf person into a world of sound. That is important psychologically, he said. Also it may be possible for the deaf to combine the speech pattern they hear with visual aids such as lip reading for better understanding of language.

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OPHTHALMOLOGY

Eye Damage Reported In Contact Lens Survey

➤ FOURTEEN cases of eye loss or blindness and 157 cases of permanent eye damage occurred within one year among approximately 50,000 contact lens wearers, a national survey has shown.

Infection was present in each of the 14 reported cases of eye loss or blindness, according to an American Association of Ophthalmology study reported in the Journal of the American Medical Association, 195:901, 1966.

There were also 7,607 cases of reversible changes in patients eyes among the 49,954 persons examined. These were changes from which patients recovered without permanent defects.

"The popularity of contact lenses has exceeded the public knowledge of potential hazards associated with their use," the organization's committe on contact lenses said.

Eye complications associated with contact lenses are more frequent among older persons and those with previous eye injuries or disease than among other persons. Prolonged wearing or sleeping with the lenses on the cornea can cause trouble. As soon as any complications appear, the lenses should not be worn.

"The wearing of contact lenses is an abnormal condition which can result in serious medical complications," the report stated.

"This survey and previously published clinical and laboratory studies suggest that the majority of patients wearing contact lenses have some degree of alteration of the ocular tissues, changes in the corneal metabolism, or other medical problems associated with their use."

Properly constructed lenses that fit correctly and cause a minimum of corneal changes are among the responsibilities of the ophthalmologist, the researchers stated.

Drs. Joseph M. Dixon, Charles A. Young Jr., Joseph A. Baldone, C. Peter Halberg, Whitney Sampson and William Stone Jr., made the report with the assistance of eight other physicians who served on the committee on contact lenses.

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IN SCIENC

PSYCHOLOGY

Girls May Be More Hostile Than Boys

➤ CONTRARY to belief, little girls may be more hostile and aggressive than little boys.

Dr. Norma Feshback, University of California at Los Angeles psychologist, reached this conclusion after conducting experiments with a group of 65 boys and 61 girls to measure direct and indirect aggression. The children were first graders, primarily from middle class backgrounds.

Eighty-four of the children were organized into two-member "clubs." In half of the clubs, members were of the same sex.

Acts of direct aggression, by word or deed, were not significantly different between boys and girls. But the initial response of girls to a third member, whether another girl or a boy, was more likely to be one of exclusion and rejection. Many more of the girls, on learning that a third child was to join them, spontaneously made some negative, critical remark.

While previous studies have suggested boys were more aggressive than girls, such findings seem to relate to their greater physical activity, Dr. Feshback said.

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GENERAL SCIENCE

Junked Cars Support Mississippi Bridge

➤ BATTERED, rusty cars from a junkyard are holding up a bridge in southwest Mississippi.

The bridge spans the Homochitto River which has a wicked current and a history of bridge destruction. Last fall Hurricane Hilda raised a flood that washed away the bridge's timber pilings.

To protect the bridge from the current, the Mississippi Highway Department has constructed a jetty using old cars. The automobiles were lined up three deep for 750 feet along the river bank, upstream from the bridge. Cables were used to lace the bodies together and anchor them to the buried timbers. Sand was then poured over the cars.

Mississippi engineers are now waiting for the river to deposit its sand and residue to form a natural jetty.

If the experiment is successful, the plan could be used elsewhere with the triple advantage of eliminating scrap, protecting bridges at a fraction of the normal cost, and reducing river bank erosion, the Highway Research Board reported in its publication Highway Research News, February, 1966.

• Science News, 89:220 April 2, 1966

E FIELDS

GENERAL SCIENCE

Science Communications Network Is Planned

➤ A NATIONAL network to enable scientists and engineers to communicate and easily exchange information is under study by a newly formed Committee on Scientific and Technical Communication.

The process of sending out scientific and technical information and the volume of this information have expanded at an explosive rate since World War II. This increase is a consequence of the expansion of U.S. research and development activities to an estimated $23 billion for expenditures during the current year.

Chairman of the committee of 14 leaders in academic and industrial research and technology is Dr. Robert W. Cairns, director of research of the Hercules Powder Company, Wilmington, Del. The Committee was jointly established by the National Academy of Sciences and the National Academy of Engineering.

• *Science News, 89:221 April 2, 1966*

PHYSICS

U.S. Must Pay to Keep Physics Leadership

➤ THE UNITED STATES will have to pay if it wants to keep its leadership in physics.

Although the U.S. is now strong in physics, it can maintain its position only through vigorous growth.

That promise—or threat—was one main conclusion of a report issued by the National Academy of Sciences.

Physics is the most basic of the natural sciences. It provides an indispensable intellectual foundation for national achievements in other sciences and in technology. To keep that foundation strong, the report urges giving immediate attention to many pressing problems, particularly the support of physics education to ensure an adequate supply of scientists in the future.

The report, titled "Physics: Survey and Outlook," was prepared by an 18-member Physics Survey Committee under the chairmanship of Dr. George E. Pake, provost and physics professor at Washington University, St. Louis. It is the fourth in a series by the Academy examining the current status and future potentials of major areas of science. Previous reports covered astronomy, chemistry and the uses of computers in university research.

Unless total science budgets are increased so that the rapid growth rate of a few years ago can be resumed, the country will be faced with a painful choice: to preserve the growth of general academic research or to make new commitments to large scientific projects.

One such large project recommended in the report is the "earliest possible authorization" for construction of a 200 billion electron volt accelerator. A special Academy Committee has made recommendations for possible construction sites.

Foremost among the important problems facing US. physics is the need for increasing financial support to keep pace with revolutionary developments in the instrumentation and techniques of physics research, continuing large increases in the number of physics professors and students, and the need for more physics teachers at all educational levels.

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GENERAL SCIENCE

Six Accelerator Sites Recommended to AEC

➤ THE ATOMIC Energy Commission has received a report from the National Academy of Sciences recommending six possible locations for the AEC's proposed 200 billion electron volt (BEV) proton accelerator.

The locations, recommended without ranking by the Academy, are: Ann Arbor, Mich.; Brookhaven National Laboratory, Upton, Long Island, N.Y.; Denver, Colo.; Madison, Wis.; Sierra Foothills, near Sacramento, Calif. and South Barrington (or Weston), near Chicago, Ill.

After a review of a great many proposals, the Commission asked the National Academy of Sciences to evaluate each one on which there was sufficient information to indicate the location met the minimum site criteria. There were 85 such proposals suggesting more than 150 different tracts in 43 states. The criteria specified at least 3,000 acres meeting certain conditions with respect to water, power, geology and other factors.

The NAS evaluation was performed by a 10-member special committee headed by Dr. E. R. Piore of New York, vice president and chief scientist of the International Business Machines Corporation.

The Commission now plans to carry out additional studies as may be necessary. The completion of this work and analysis of the resulting data may take several months.

Studies on the accelerator are being conducted primarily at the AEC's Lawrence Radiation Laboratory in Berkeley, Calif.

The accelerator will be the main facility in a proposed new national accelerator center. Cost of the project is estimated at a total of about $375 million, and construction will require six to eight years.

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SURGERY

X-Rays Show Pouch Causes Infant Coughs

➤ NEWBORN babies who cough and spit up their milk sometimes have a "blind pouch" at the end of the esophagus, which normally should connect with the stomach, a Nova Scotia physician told a radiologists' meeting in Montreal, Canada.

There is a "surprisingly high surgical cure rate" for the dead-end esophagus when the trouble is properly diagnosed, said Dr. Edward B. Grantmyre of Halifax.

Dr. Grantmyre was successful in treating 30 such abnormalities in newborn babies, using an X-ray technique. Before the X-rays were taken, he slipped a soft rubber tube down into the esophagus in order to place an opaque liquid into the blind pouch. This liquid, which is later removed, aids in the study of films.

X-ray studies will also reveal the presence of any tiny channels, or fistulas. These fistulas are often found with such an abnormality of the esophagus and wind from the esophagus to the windpipe or to a small abnormal opening in the stomach.

Sometimes a fistula opening can occur when the esophagus is otherwise normal and connected to the stomach. It must be suspected in any child who has had a history of recurrent bouts of pulmonary infection, and particularly when choking spells follow feeding, Dr. Grantmyre said.

The report was given at the annual meeting of the Canadian Association of Radiologists. Drs. D. A. Gillis and Ralph A. Smith, two other Halifax physicians, assisted Dr. Grantmyre.

• *Science News, 89:221 April 2, 1966*

MEDICINE

Kidney, Gum Ills Tied To Pregnancy, Diabetes

➤ PREGNANT WOMEN and diabetics both seem particularly vulnerable to kidney malfunctions and periodontal (gum) disease. Drs. D. Walter Cohen and G. Clayton Kyle of the University of Pennsylvania's School of Medicine have received a $506,000 grant from the U.S. Public Health Service to investigate the possible relationship.

They will be studying a carefully selected group of 100 women, all under 35, divided into four groups of 25 each: pregnant diabetics, non-pregnant diabetics, pregnant non-diabetics and non-pregnant non-diabetics.

During the five years of the study, each patient will be tested annually for condition of her gums and teeth, and kidney tissues. If similar changes are observed in the gum and kidney blood vessels, examinations of gum tissue might eliminate the need for kidney biopsies to detect vascular disease in many patients.

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