

IMMUNOLOGY

Hepatitis Vaccine Search Carried to the Congo

► CHIMPANZEES from the Congo soon will be shipped to a research center near New Orleans for experiments that could lead to a vaccine against infectious hepatitis, a severe liver disease.

A team of researchers is already at Lwiro, in the eastern section of the Republic of the Congo, Dr. Arthur J. Riopelle, director of the Delta Regional Primate Research Center of Tulane University, said.

As far as is known, Dr. Ripoele said, the chimpanzee is the only animal primate than can develop hepatitis. The ability of the chimp to carry the disease was noted about two years ago at a primate research facility in Orange Walk, Fla., when two of the animals infected six workers. Since then about 70 cases of hepatitis have been traced to chimpanzees.

Research team members in the Congo are trying to capture chimps for use in experiments concerning their susceptibility to hepatitis. After undergoing initial tests, the animals will be shipped to the Tulane center, Covington, La.

Dr. William D. Hillis, a U.S. Air Force physician, is directing the work of the team at Lwiro, where the Central African Institutes for Scientific Research is located.

Ever since the hepatitis virus was isolated in 1961, the search for a vaccine has been underway in this country. Dr. Joseph D. Boggs of Children's Memorial Hospital, Chicago, who isolated the vaccine, told SCIENCE SERVICE that although research is continuing with prisoners at the Illinois State Penitentiary at Joliet, a vaccine is not yet ready.

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PSYCHOLOGY

'Glue Sniffing' Solution Seen in New Chemical

► A SOLUTION to the nationwide problem of teen-age "glue sniffing" may be at hand.

The Hobby Industry Association of America has announced that a new chemical is being developed to replace the intoxicating solvents now used in airplane glues. It should be ready within a year.

The Association's manufacturer members will use the new solvent in making airplane glues, ironically called dope.

This should help stem a problem that has confronted parents, school officials and police for several years. Glue sniffing is one way many of today's youngsters are getting their "kicks."

The situation is so bad that some states have made sniffing a misdemeanor. Some have banned the sale of "sniffable" glues.

Two recent news stories dramatically illustrate the problem.

In New York City, a 15-year-old boy plunged five stories to his death as he tried to leap between the roofs of two buildings. Nearby police found an open tube of airplane glue.

In Memphis, Tenn., a 12-year-old boy pleaded with a juvenile judge for help in curing his five-year-long addiction.

"I just need some place to go where I can get off the stuff," he said. The stuff was airplane glue.

Glue sniffing can be dangerous physically, although its more common effects are psychological.

Prolonged sniffing can burn out nose membranes and damage the liver, kidneys and respiratory organs.

Psychologists report teen-age glue sniffers often have personalities like those of adult alcoholics—they are persons who cannot face up to things.

Like alcoholics, regular sniffers develop a tolerance. One tube of glue is usually enough to get a beginner high, but a more experienced sniffer may require as many as five tubes.

The effects of sniffing range from mild intoxication, exhilaration and excitement to uncoordinated actions, slurred words, seeing double and a buzzing in the ears. In some cases, drowsiness or unconsciousness may overcome the sniffer.

Some sniffers become belligerent. A 12-year-old Miami boy caught sniffing airplane glue grabbed a knife and threatened to kill his father. Another boy attacked a close friend with a broken bottle.

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PSYCHOLOGY

Urge to Leave Earth Seen as Psychological

► WHY SHOULD human beings possess the urge to leave the earth?

Dr. Floyd S. Cornelison Jr., professor of psychiatry at Jefferson Medical College, Philadelphia, has discarded the usual reasons—"because it's there," national prestige, scientific advancement, etc.—and come up with a new one.

"Man's urge to leave the earth is the expression of a need to leave his point of origin," he believes.

Dr. Cornelison said that this urge, basically biological in nature, is in harmony with the concept of the long-range process of man's continued existence as a living organism. He said it is even compatible with man's magnificent fantasy of immortality.

"The origins and mechanisms of the age-old dreams of human flight may never be completely clear to us," he said. "Observations of behavioral phenomenon, however, may offer some useful clues."

He cited these biological processes in support of his theory: sperm and ova leaving their parent organs, the fetus emerging from the mother's womb, the child growing up and leaving the family, the individual dying and leaving the condition known as life.

"It is interesting, even rather incredible," said Dr. Cornelison, "that we have come to call this globe of ours 'Mother Earth.' In order to survive and to pursue our inevitable destiny, we may be bound to leave her."

Then he added, "Sentimentally, I only hope there is time."

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IN SCIEN

PUBLIC HEALTH

Backyard Swim Pools Must Be Disinfected

► NOW THAT the swimming pool season is beginning, the danger of spreading harmful viruses and germs in pools is growing. Only disinfectants can protect you.

Properly disinfected pools inactivate micro-organisms, including six common intestinal viruses and parainfluenza-1, Dr. Donald McLean of the Research Institute of the Hospital for Sick Children, Toronto, Canada, has reported.

He warned of the high bacterial count in unchlorinated lake waters and wading pools. A disease accompanied by a rash, called an exanthem, which was due to Coxsackie A16 virus in a Toronto suburb a few years ago, was believed spread through the use of backyard swimming pools by neighborhood children.

Bromine and iodine have been successful as pool disinfectants, but in most communities chlorine is used. The U. S. Public Health Service approves the use of iodine if it is not allowed to accumulate more than five parts per million (five pounds of iodine per million gallons of water).

The residual for chlorine is one-half part per million. Chlorine is added to the water in swimming pools either as chlorine gas or as a solution of sodium hypochlorite or calcium hypochlorite.

Most city health departments are overzealous about keeping commercial pools disinfected, but they often overlook the backyard swimming pool.

Here are some warnings, both for public and neighborhood pools:

Be sure the pool is disinfected according to city health department specifications.

Take a shower before swimming.

Do not go in immediately after eating.

Never go in the pool with infected skin eruptions such as boils.

Do not go in following recent smallpox vaccination, eye inflammation or diarrhea.

Do not blow water out of the mouth if it can be avoided.

Do not stay in the water too long—till you are chilled.

Learn to swim.

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ENGINEERING

Coal Mining Shaft Driven Upward

► A WAY of driving a coal mining shaft up instead of down was described to the American Mining Congress Coal Show in Cleveland. The Woodward Iron Company, Woodward, Ala., successfully blasted up to the surface from an existing underground mine rather than blast down. The method makes it easier to remove broken rock after the explosion.

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CE FIELDS

METEOROLOGY

India's Monsoons Affect Northern Hemisphere

► INDIA'S SUMMER MONSOONS probably affect the weather of the entire Northern Hemisphere, preliminary results from the International Indian Ocean Expedition indicate.

Monsoons inject vast amounts of energy into the atmosphere above India and Pakistan. This affects temperature and air circulation throughout that area and probably around the globe, Dr. Colin S. Ramage believes. He is scientific director of the meteorology program of the Indian Ocean Expedition.

Dr. Ramage noted that results of the survey to date show that long-range monsoon forecasts are foredoomed to failure because the Indian monsoon is essentially local in nature.

Monsoons are seasonal winds that blow in response to seasonal changes in land and sea temperatures. They bring six months of heavy rains and humid weather to India.

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BIOCHEMISTRY

Drug Promises to Control High Blood Pressure

► HIGH BLOOD PRESSURE in man is expected to be controlled soon by an unusual substance found in the inner part of the kidney, a team of Boston researchers reported.

The substance has been identified as a lipid, or fat, that dilates the blood vessels and lowers the blood pressure in dogs as well as in rats used in laboratory experiments.

When a completely purified product is obtained and more experiments are done, the promising treatment can be tried out on humans.

Dr. Roger B. Hickler told the meeting of the Association of American Physicians that he and his collaborators at Peter Bent Brigham Hospital, Boston, had been seeking a blood-pressure-reducing agent in the kidney because of the knowledge that one form of hypertension was related to that organ.

Research by Dr. Harry Goldblatt of Western Reserve University, Cleveland, some years ago, showed that one kind of high blood pressure is caused by reduced blood flow to the kidney and to the secretion by the kidney of some pressure-raising substance. Hypertension arising from this type of disturbed circulation in one kidney has been relieved when the kidney was removed.

Now Dr. Hickler's team has isolated and partially identified the vasodepressor, which lowers blood pressure, found predominantly in the inner portion, or medulla, of the kidney. The blood-raising substance is known to be secreted by the outer layer, or cortical area, of the organ.

The vasodepressor material when injected into the veins of animals showed a "true vasodilator reaction," Dr. Hickler said, which shows promise in treating high blood pressure in man. The animals' reaction is associated with a fall in aortic blood pressure and a rise in the heart's output.

Cooperating with Dr. Hickler were Drs. D. P. Lauer, C. A. Saravis and George W. Thorn.

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PSYCHOLOGY

Honeymoon Experiences Affect Adjustment

► AS THE HONEYMOON GOES, so goes the marriage, studies of young couples indicate.

"What happens on honeymoons tends to have important effects on the development of subsequent marital relationships," report Drs. Rhona and Robert N. Rapoport of the Harvard School of Public Health and Northeastern University, Boston.

Going against the notion of the honeymoon as the ultimate experience in bliss, the investigators believe it is a period of great risk. For the adjustments made during this time set a pattern for the rest of the marriage.

There are four basic "tasks" to be learned on the honeymoon, according to the Rapoports' analysis, reported in the journal *Human Relations*, 17:23, 1964.

The first is sex. It means coming to terms with fears and feelings about intimate relations.

The second task is learning to live together in close contact. This boils down to reaching agreements about sharing the same bed and bathroom and undressing in front of the partner.

Since honeymooners "have the time and the license to indulge in lovemaking," the Rapoports say, the third task is "to lay the basis for their future sexual relationship."

Finally, the honeymoon should set the pattern for working out important problems.

If these four tasks are not learned well, the Rapoports believe, mental health may be endangered.

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GENERAL SCIENCE

M.I.T. \$15 Million Fund For Physical Research

► A \$15 MILLION fund at the Massachusetts Institute of Technology has been established for basic research in the physical sciences. It is dedicated to the advancement of American scientific knowledge.

A personal gift of \$5 million by Alfred P. Sloan Jr., General Motors former executive, is matched by a supporting gift of \$5 million by the Alfred P. Sloan Foundation. Both will be consolidated with an earlier \$5 million grant of the Foundation to M.I.T., dedicated to the same objective. Mr. Sloan holds that there is an imbalance between basic research and applied research, and that there is not sufficient support of the fundamental research to maintain and strengthen the validity of application.

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MEDICINE

Lingering Infection From Disguised Bacteria

► LINGERING INFECTION or recurrence following apparently successful drug treatment may be caused by "disguised" bacteria.

This possibility has been suggested by Drs. Lucien B. Guze and George M. Kalmanson of the Los Angeles Veterans Administration Center and the University of California, Los Angeles, Medical School.

The researchers were especially concerned with a serious kidney infection known as pyelonephritis. This disease is characterized by frequent recurrence despite seemingly adequate therapy. In many cases the disease seems to grow progressively worse despite the absence of bacteria as demonstrated by standard laboratory techniques.

The investigators infected rats with bacteria that cause pyelonephritis and treated them with penicillin. The researchers were not able to demonstrate presence of the bacteria by standard laboratory procedures following drug treatment.

However, by special techniques they were able to demonstrate the presence of protoplasts. These are bacterial cores consisting of the cell nucleus and protoplasm without a cell wall, a disguised form not demonstrable by standard procedures.

The bacteria persisted in the kidneys in this form for at least 13 weeks after treatment. The protoplasts reverted to the regular bacterial form upon culture in a special medium.

The Los Angeles research team is continuing its investigation to determine whether the protoplasts themselves are capable of infecting or merely "hole up" in disguise until drug and/or antibody levels are low enough for them to convert to bacterial form and resume their attack.

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SPACE

Plan As If Life Does Exist on Mars

► IT IS TIME to assume that life does exist on Mars and do away with the term "probably," an aeronautical engineer and doctor of medicine said at a session of the American Society for Microbiology meeting in Washington, D. C.

The term "probably" is a misnomer, Dr. Curtis E. Miller of Dynamic Science Corporation, South Pasadena, Calif., reported. Life either does or does not exist on Mars and there is no "probably" about it.

By assuming life on that planet, preparations for the necessary sterile environment can go ahead at a cost of only about 10% more than preparations for a "probably no life" visit.

A sterile environment is necessary both for astronauts on Mars and for Martian organisms, Dr. Miller pointed out at a round table on gaseous sterilization. He described the ethylene oxide process for sterilization of spacecraft.

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