

## BIOCHEMISTRY

**Fat Put in Veins Takes Out Cholesterol**

► A FAT MYSTERY is being probed by scientists at Harvard School of Public Health, Boston.

Solution of the mystery may help in the fight against the dangerous artery disease, atherosclerosis, and consequent heart disease.

The mystery is why does putting fat into the blood take fat out of the blood.

The fat is injected in the form of an emulsion. In normal persons, the fat put into the blood has been cleared from the blood in three to six hours. In patients it took eight to 12 hours. This was what the scientists expected.

"Much to our surprise, however, the blood cholesterol (fat) levels in the ill patients continued to fall even with but one infusion (injection) of the fat emulsion," Dr. Fred J. Stare said in reporting the findings to the American Chemical Society.

One patient, with a blood fat content of some 600 mg. percent (the normal person has about 250 mg. percent of fat in his blood), received fat emulsion infusions for seven consecutive days.

"At the end of the seven-day period," Dr. Stare said, "the cholesterol level in the blood stream of this patient had dropped from the 600 mg. percent to 260 mg. percent—a decrease of 60% in seven days.

"For fat emulsions given by vein to result in a reduction of the serum cholesterol seems somewhat of a paradox," Dr. Stare admitted. "What the effective factor in the emulsion is, where the cholesterol goes, and what this means clinically, are, of course, unanswered questions of major interest."

The findings were made by Dr. William Waddell in Dr. Stare's department and Dr. Walter Lever of Harvard Medical School.

Science News Letter, May 26, 1956

## VETERINARY MEDICINE

**Long-Lived Dogs Are Sheltered and Loved**

► DOGS that reach the age of 17 or more, the human equivalent of 100, usually come from happy homes, receive love and kindness, get a good diet and plenty of fresh air, and have a "good mental outlook," according to their owners.

Of about 200 old timers surveyed by the Gaines Dog Research Center in New York, the majority had been given "loving care, a reasonable diet and good living conditions," and had lived a sheltered life.

The survey included dogs from 31 states. Most of the animals were 17 or 18 years old, although one had reached the venerable age of 26.

The typical long-lived dog, the survey shows, is male, mixed breed, born in city or suburb, and is not particularly big. As a puppy, he got a variety of food, including milk, meat, table scraps and dog foods, but

after he matured, he graduated to a steady diet of dog food and meat.

He is a house dog and has slept indoors all his life. He gets most of his exercise running around the back yard or neighborhood and going for walks on a leash.

The dog is a family companion at home and when traveling. He lives in a family with children.

He does not get regular physical check-ups, but he has occasionally required veterinary care. Chances are he has never been hospitalized. Other than mishaps with automobiles and occasional dog fights, he has never been in an accident.

What about the typical old-dog owner?

He is firmly convinced his dog has superior intelligence, and he thinks the dog has proved it by living to a ripe old age. He believes loving care is chiefly responsible for his pet's long life.

Science News Letter, May 26, 1956

## MEDICINE

**Use Radioactive Beads To Destroy Head Gland**

► TINY BEADS of rare radioactive yttrium are being used by University of Chicago doctors to destroy the pituitary gland in the head.

Object of the gland destruction is to help patients with widespread metastases from cancer of the breast. To date, 28 such patients have had this treatment. The majority seem to have been helped, reports the American Cancer Society.

Pain has stopped and there are signs that some of the metastases have shrunk.

The treatment was developed by Drs. T. R. Rasmussen and P. W. Harper. They drill a hole through the skull and then deposit the beads of radioactive yttrium. The radiation from the beads or pellets is just strong enough to destroy the gland without injuring adjacent parts of the brain.

The radiation destroys the gland slowly, taking hours or days, instead of instantaneously as when it is removed by being cut out. As a result, the patients are able to adjust to the loss of the pituitary hormones and do not have as difficult a time after this treatment as after surgical removal.

Science News Letter, May 26, 1956

## INVENTION

**Combined Cape and Hood For Servicemen Patented**

► AN ALL-PURPOSE CAPE and hood that can be shoulder-carried and quickly rolled over the body has been invented by two Government scientists, Ralph W. Persico and Dominic Pompa of Philadelphia, Pa. By pulling a strap, the one-piece poncho-like cape, which is rolled inside out, drops down over the wearer. They received patent No. 2,745,104 and assigned rights to the United States of America as represented by the Secretary of the Army.

Science News Letter, May 26, 1956

**IN SCIEN**

## CARDIOLOGY

**Find Heart Affected In Over 50 Diseases**

► HEAT STROKE, radiation, arsenic poisoning, a host of disease germs, rheumatoid arthritis and a strange ailment called sarcoid are among conditions that may affect the heart, doctors gathered in Washington for the Armed Forces Institute of Pathology post-graduate course on diseases of the heart were told.

The heart condition in these various ailments is called myocarditis, meaning inflammation of the heart. It has been recorded in over 50 different diseases, according to Dr. William C. Manion, chief of the AFIP cardiology section and director of the study course.

True myocarditis, Dr. Manion says, is not only not rare, but probably will be found to exist even more often if doctors and pathologists continue to study patients and hearts obtained after death with this heart ailment in mind.

Science News Letter, May 26, 1956

## MEDICINE

**Devices Help Infants Born Without Hands**

► A "HELPING HAND" to infants born without hands or arms is being provided by the University of California at Los Angeles' Child Prosthetics Project.

New prosthetic devices, including a tiny, plastic hand, are enabling such children to adjust both physically and psychologically to their handicap, Frank Harland, project administrator, reported.

"The fitting of infants with artificial arms and hands is a comparatively new practice," Mr. Harland said. "Research at the project has demonstrated that the application of such mechanical aids to the child at a very early age enables him to accept the devices more as a part of himself.

"Our earliest experience has been with a four-month-old child, and we recommend that children be fitted by six months of age. If the prosthesis is delayed until a child is four or five years old, he may resent it. He also may have learned compensatory habits which would further complicate his adjustment to a prosthetic device."

The Child Prosthetics Project is supported by the Federal Health, Education and Welfare Department through the California Bureau of Crippled Children Services, which administers the funds.

All children currently admitted to the program are referred to it by the State organization.

Science News Letter, May 26, 1956

# CE FIELDS

## GEOPHYSICS

### Scientists to Measure H-Bomb Debris

► **ATOMIC DEBRIS** drifting through the stratosphere following the current Pacific H-bomb explosions is being measured by scientists atop Mt. Palomar, Calif., using a polarimeter.

This instrument, a polarizing device much more sensitive than regular polaroid lenses, consists of a revolving mica crystal and a Glan-Thompson prism, operated electronically.

The measurements are being made in the early morning, late afternoon and at twilight for several weeks by University of California at Los Angeles scientists working under the direction of Dr. Zdenek Sekera, professor of meteorology.

The aim is to find the amount of atomic debris from differences in the degree of daylight sky polarization before and after the current H-bomb tests. Minute changes, it is hoped, will indicate not only the amount but the size of particles involved.

Similar measurements have been made following major volcanic eruptions, when huge clouds of volcanic dust in the stratosphere drift around the world.

The polarization measurements are being made under a contract with the Atomic Energy Commission and the Air Force.

Science News Letter, May 26, 1956

## MEDICINE

### Bandage Burned Child In Skin from Dead

► **LIVES** of badly burned children can be saved by wrapping them in skin from dead bodies, Dr. Frank W. Pirruccello of Northwestern University Medical School, Chicago, said at an Illinois State Medical Society meeting in Chicago.

"We literally bandage the child with skin, which readily grows, providing the same aseptic precautions are used in its removal and in the preparation of the recipient area," he said.

"This is the quickest method of converting the open wound to a closed wound and in many cases spells the difference between life and death for many of these young patients."

A five-year-old boy burned over 58% of his body had more than 1,000 square inches of skin from two corpses grafted onto him in two operations about two months apart. The child's burns were completely healed and he was discharged from the hospital five months after he had been admitted.

His case was one of 100 children, aged 11 months to 15 years, who had this skin grafting treatment at St. Francis Hospital,

Evanston, Ill., or the University of Wisconsin Hospitals, Madison, Wis.

Common causes of severe burns in children, Dr. Pirruccello warned, are steam irons and electric coffee pots, poorly constructed steam vaporizers that are easily upset, bonfires, partly empty gasoline and kerosene cans, and chemistry sets improperly used without adequate instruction and supervision with resultant explosions.

All too frequently, he said, it is the above average child with a curious mind who is injured.

Science News Letter, May 26, 1956

## CARDIOLOGY

### To Examine Hearts of Wrestlers and Runners

► **PHYSIOLOGISTS AND PHYSICIANS** plan to make electrocardiograms of champion wrestlers, weight lifters and distance runners taking part in U. S. Olympic trials.

They are trying to learn if there are significant differences between the average man's heart and that of the trained athlete accustomed to prolonged periods of physical exertion.

The research group will be headed by Dr. Lawrence Morehouse, physiologist at the University of California at Los Angeles. Other members of the team include Dr. Carlyle Stout, cardiologist at the College of Medical Evangelists; two doctoral students in physiology at the University of Southern California, David Geddes and Phil Rasch, and Gene O'Connell, a graduate student at U.C.L.A.

First step in the study was electrocardiograph examination of 75 wrestlers taking part in Olympic team finals at the Hollywood Legion Stadium. The scientists hope to make similar examinations of weight lifters at the Olympic finals for that event in June in Philadelphia, and of distance runners competing in Olympic trials in Los Angeles.

Science News Letter, May 26, 1956

## HISTORY

### Uncover Revolutionary War Surrender Site

► **REMAINS** of Redoubt No. 10 on the Yorktown Battlefield in Virginia on which George Washington received and signed British General Cornwallis' surrender papers, Oct. 19, 1781, have been uncovered by archaeologists of the National Park Service.

Steps will be taken at once to restore the historic bunker to its Revolutionary War appearance, Conrad L. Wirth, director of the National Park Service, said.

Redoubt 10 is believed to have been leveled on Washington's orders.

Archaeologist Edward B. Jelks, who found two corners of the fortification, is now digging to see how much more of the redoubt has survived the erosion of the river bank on the edge of the battlefield.

Science News Letter, May 26, 1956

## ASTRONOMY

### U.S. Loses Famed Astronomer to Australia

► **A LEADING** United States astronomer, Dr. Bart J. Bok of Harvard College Observatory, is leaving the United States to become director of the Commonwealth Observatory of Australia on Mt. Stromlo, Canberra.

Dr. Bok's life-long field of study has been the Milky Way, the giant pinwheel of billions of stars in which the sun and its planets are located. Since World War II, he has led in the training of American astronomers in the field of radio astronomy, studying the universe by radio waves.

In Australia, Dr. Bok, who was born in Holland, will work in close collaboration with radio astronomers of the Commonwealth Scientific and Industrial Research Organization who have pioneered in radio astronomy.

Astronomers consider Dr. Bok's departure, scheduled for early 1957, a serious loss to U.S. leadership in astronomy.

The Commonwealth Observatory on Mt. Stromlo is a principal center for studying the most intricate part of the Milky Way, which can be seen only in the Southern Hemisphere. Its new 74-inch reflector telescope is one of the two largest observing instruments in the Southern Hemisphere. Associated with the Observatory are a Yale-Columbia Station and a station of the Uppsala Observatory of Sweden.

Harvard College Observatory is the oldest university observatory in the United States, founded in 1843.

Science News Letter, May 26, 1956

## PLANT PATHOLOGY

### Pale Plants Have Fewer Stomata

► **CHLOROPHYLL**, which makes plants green, is not as abundant in plants with few stomata, or breathing pores, as in plants with many stomata.

The correlation between plant greenness and number of stomata was discovered by Profs. D. C. Cooper, G. H. Rieman and W. K. Smith of the University of Wisconsin.

Improperly functioning stomata do not permit as great an exchange of oxygen for carbon dioxide as would be expected. Consequently, photosynthesis is restricted. Chlorophyll, ceasing to perform its usual functions, gradually disintegrates. This makes the leaf paler.

In a plant that normally has few or small stomata, chlorophyll will be less abundant and the plant will appear pale next to many of its neighbors.

Appearance is not always a safe indication of the amount of chlorophyll in a plant. The pigments may be massed close together, as in the red cabbage. Plants in dark forests, such as holly, may have chloroplasts oriented in such a way as to take maximum advantage of the dim light.

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