MEDICINE

Monkeys Help Attack On Artery Disease

➤ THE SCIENTIFIC attack on a serious form of artery disease, called atherosclerosis, may now move ahead faster with the aid of monkeys.

Artery damage like that in humans can be produced in these animals by feeding a special diet, Drs. George V. Mann, Stephen B. Andrus and Frederick J. Stare and Miss Ann McNally of Harvard Medical School and School of Public Health, Boston, announce.

Laboratory studies investigating the possible link between this kind of artery disease and diet have in the past been made with rabbits, chickens, dogs and rats. Rabbits and chickens have been the only laboratory animals so far that developed artery damage from feeding the fatty substance, cholesterol.

The damage in these rabbits, however, is quite distinct from that seen in humans with atherosclerosis. And rabbits and chickens do not eat the same foods man does. The monkey's dietary habits are much like man's, the scientists point out.

Atherosclerosis was produced in new world cebus monkeys by feeding, over a period of 18 to 30 weeks, diets high in cholesterol and low in sulfur-containing amino acids for proteins.

The results, the scientists warn, "cannot justifiably be used for inferences applicable to the human disease.

"To attribute human atherosclerosis to deficency of an amino acid would be both naive and premature at this time. Of more importance is the recognition of a primate species and a dietary procedure for further study of atherosclerosis."

Details of the research are reported in the *Journal of Experimental Medicine* (Sept. 1), published by the Rockefeller Institute for Medical Research.

Science News Letter, October 3, 1953

BIOCHEMISTRY

Clue to Better Drugs From Milk Diet Study

➤ LATEST FINDINGS in research on the milk diet against malaria give hope that scientists will be able to find better drugs against not only malaria but other infectious diseases as well.

The original discovery, by Prof. B. G. Maegraith of the University of Liverpool, England, was that malaria in rats and monkeys could be suppressed by a milk diet.

This probably holds true for man also and may explain why babies in malaria-infested tropical regions do not get malaria, though older children no longer fed exclusively at their mother's breasts do. Human milk, Dr. Maegraith found, proved better than cow's milk for suppressing malaria infection in the rats and monkeys in his laboratory.

Adding para-aminobenzoic acid to the milk, however, causes the disease to reappear. This shows that changing conditions for the host affects the malaria parasite. This latest finding was reported to the British Association for the Advancement of Science meeting in Liverpool.

From knowledge of metabolic activities and requirements it should, Prof. Maegraith says, "become to a limited extent possible to perform our highly unnatural in vitro (test tube) investigations in vivo (in the living animal) in the natural conditions of the host."

His new method of research is expected to lead to study of infective agents in natural environment and to a more logical approach to chemotherapy.

Science News Letter, October 3, 1953

VITAL STATISTICS

Hurricane Death Toll Cut by Weather Warning

➤ A MARKED drop in hurricane deaths in the United States since 1938 is notd by statisticians of the Metropolitan Life Insurance Company.

Of the 3,615 lives taken by these storms in the past 30 years, only 239, or seven percent, were lost since 1938. The number of hurricanes causing loss of life, however, was almost equally divided between the two periods.

The marked reduction in hurricane deaths, the statisticians say, can be credited to successful efforts by the U. S. Weather Bureau and the military services which search out and track these storms while far from our shores and issue early warnings.

Science News Letter, October 3, 1953

NUTRITION

Six Meals Daily for Those in Heavy Industry

➤ NUTRITIONISTS NOW recommend six meals a day for workers in heavy industry and for farmers, the Nutrition Foundation in New York reports. Snacks between meals are especially important when work begins early in the morning, it is found.

A heavy midday meal and a two-meal-a-day-schedule are not good from the standpoint of the workers' production efficiency.

The object of the frequent meals is to give the workers enough food so that his blood sugar does not fall below normal.

Feelings of emptiness and weakness, restlessness, irritability and decreased ability to concentrate go with long intervals between meals. And that drowsy feeling with disinclination to mental or physical effort plus a slowdown in production after a large midday meal comes from a full stomach, but similar effects can be produced when the stomach is distended with air instead of food.

Science News Letter, October 3, 1953

IN SCIEN

BIOCHEMISTRY

Saffron Spice Richest In Riboflavin or B-2

➤ SAFFRON, THE spice so highly prized in the Orient, is "easily the richest known source" of riboflavin or vitamin B-2, researches in Bombay indicate.

Saffron has about three times as much riboflavin as yeast or liver, considered to be rich sources. The vitamin content was assayed both by use of spectrum and by its effect on a test organism.

Part of the flower of the plant, known botanically as *Crocus sativus*, saffron is expensive because it consists of the stigmas, the parts of the pistils of this flower which receive pollen grains and on which they germinate. It is gathered laboriously by hand.

J. V. Bhat and Rajul Broker of the Pathological Laboratories of St. Xavier's College, Bombay, reported their studies in *Nature* (Sept. 19).

Saffron's content of thiamin or B-1 vitamin was found to be insignificant, however.

Science News Letter, October 3, 1953

INVENTION

Polarized Sun Glasses Serve Dual 3-D Purpose

➤ POLARIZED SUN glasses that double as viewers in dark 3-D theaters now are in the process of being patented.

Paul R. Forgrave, a 27-year-old neurophysiologist at the Walter Reed Army Medical Center in Washington, told SCIENCE SERVICE that he has created a pair of glasses with swiveling lenses.

The glasses, he said, should be more comfortable to wear than the awkward cardboard species now distributed at theaters. His glasses somewhat resemble aviation-type sun glasses now available.

To use them in third-dimensional movies, the wearer merely twists the lenses so that the area near the nose moves up toward the forehead. This provides the proper light polarizing angle for viewing Natural Vision 3-D movies. The lenses, however, are worn in the customary position when the glasses are used to shield motorists' eyes from sun-glare.

This is because light forming the glare on roads largely is polarized horizontally. Three-D movie light is polarized at 45-degree angles to this horizontal. The swiveling lenses compensate for the different angles of polarization.

Mr. Forgrave now is pushing a patent application through official channels to obtain legal protection for his invention.

Science News Letter, October 3, 1953

CE FIELDS

HERPETOLOGY

Snake-Scented Food Pleases King Cobra

➤ THE KING cobra has a regal appetite, for a snake. However, zoologists at the Staten Island Zoological Society have devised a method of tricking the cobra into eating such ordinary fare as horsemeat and rats, Carl F. Kauffeld of the zoo staff will report in *Herpetologica*.

Under normal circumstances the king cobra eats only snakes, or snakes stuffed with dead mice and horsemeat, a diet which can use up a lot of snakes. After the Staten Island Zoo king cobra arrived from Thailand in July, it was discovered at one feeding that it would eat a white rat if the rat had been rubbed against a water snake.

A series of scientific tests established the importance of scent in the cobra's feeding, and the scientists have now decreed a diet of horsemeat and rats flavored with water snake and supplemented with vitamin pills for the cobra. The meat is stored for a few hours prior to the feeding period in a jar with water snakes. After this scent-impregnation, the cobra takes his horsemeat like a gourmet consuming caviar.

The 14-foot snake also has a pretty healthy appetite for a snake and will take up to three pounds of meat at a feeding.

Science News Letter, October 3, 1953

BIOCHEMISTRY

Chemical in Body Sets Resistance to Tuberculosis

➤ A CHEMICAL factor in the body seems to be important in resistance to tuberculosis, Dr. Quentin Myrvik of the department of microbiology and the University of Virginia Medical School has stated.

Speaking as guest of Watson Davis, director of SCIENCE SERVICE, on the Columbia Radio Network Adventures in Science program, Dr. Myrvik explained that research upon the enzyme, lysozyme, is expected to provide a means of measuring man's resistance and perhaps increase it when necessary to combat infection.

"In the animal kingdom it is quite common to observe that one specie of animal, such as the guinea pig, is susceptible to tuberculosis, whereas another specie, such as the rat, is notoriously resistant," Dr. Myrvik said. "A similar situation occurs in humans. A small percentage of humans appear to be extremely resistant to tuberculosis, whereas a corresponding groups appears to be susceptible."

The studies in Dr. Myrvik's laboratory indicate that an enzyme called lysozyme may be important in these different states of resistance to tuberculosis. For example, the level of lysozyme in rat serum approaches the inhibitory level for tubercle bacilli. In contrast, the lysozyme content of the susceptible guinea pig is approximately one-fiftieth that of the rat.

"The basic principle of the research program is to catalog, identify, and quantitate anti-bacterial substances which play a role in man's natural and acquired resistance to infectious diseases," Dr. Myrvik declared. "Once this is established for diseases like tuberculosis, it will provide a means of measuring man's resistance, and perhaps altering it and raising it to its optimum, when infections ensue. Conventional bed rest therapy in the case of tuberculosis is an empirical method to accomplish maximum natural resistance of the individual."

Science News Letter, October 3, 1953

METEOROLOGY

Turbulence in Clear Air Jolts High Flying Planes

➤ CLEAR AIR turbulence, which can cause jolting of passengers in both high flying jets and commercial planes without visual warning, can be spotted on weather maps.

This intense bumpiness is not a "ghost-like" occurrence, but has a definite association with the jet stream, LeRoy H. Clem of U. S. Weather Bureau in Washington, told the international Toronto Meterological Conference recently.

Jet streams are narrow bands of high-speed winds found around 35,000 feet above the earth's surface. The jolting and jarring caused by clear air turbulence above 25,000 feet occurs near the maximum wind speed centers that travel along the jet stream, and not just with the jet stream in general, Mr. Clem pointed out to weathermen attending the joint meeting of the American Meteorological Society and the Royal Meteorological Society in Toronto.

These maximum wind centers can be spotted and tracked on upper-level weather charts through the use of new wind detection equipment. This electronic equipment traces wind speeds from the earth's surface well into the stratosphere, which starts at about 40,000 feet, much higher than previously possible. Weathermen therefore can get a much clearer picture of the variations in the winds, particularly at higher levels.

There are radical, vertical changes in the wind's speed near the jet maximums, Mr. Clem has discovered, and clear air turbulence is found where these sharp changes occur. He has found cases where the wind varied more than 50 miles per hour in 1,000 feet, and believes greater changes could be expected.

It now appears possible, Mr. Clem said, that plane-shaking turbulence at high levels can be forecast and thus dodged by high-flying planes in the near future.

Science News Letter, October 3, 1953

MEDICINE

Stopping Antibiotics Can Save Patients

➤ IN SOME cases life may be saved if the doctor stops giving penicillin or streptomycin, antibiotic drugs famous for the many lives they have saved.

Five cases in which these famous medicines reversed their usual life-saving roles, with three of the patients dying, are reported by Drs. Chester W. Fairlie and Ralph E. Kendall of Hartford, Conn., in the *Journal of the American Medical Association* (Sept. 12). In two of the five, the patients were saved when the doctors recognized the trouble and stopped the drugs.

All five patients got the two medicines by injection into the muscles. The antibiotics were given as prophylaxis against possible infection after operations.

Fever and diarrhea were the "cardinal" symptoms at the beginning of the condition which killed three of the five. The doctors call the condition *Staphylococcus enteritis*, meaning inflammation of the intestines due to staphylococcus infection. But, they say, the condition should really be considered as toxicity, or poisoning, from disturbed environment in the intestines. It is not, they think, just a matter of the antibiotic suppressing organisms normally present in the intestines and thus letting staphylococci grow to disease-causing numbers. More likely the antibiotic actually stimulates the staphylococci to grow.

"A direct stimulation of the Staphylococcus by antibiotics must be considered," they declare.

Fever and diarrhea appearing in a patient getting antibiotics should immediately suggest this complication. The antibiotics should be stopped at once, they advise, and attention given to fluid and salt balance in the body.

Science News Letter, October 3, 1953

CHEMISTRY

Year's Nitrogen Supply With One Resin Shot

➤ A FULL year's supply of nitrogen can be applied safely to a garden in one application of a new fertilizer material.

The same products that make Bakelite, the stable plastic widely used for telephone instruments, electrical insulation, and similar uses, can be put together in a slightly different way to make fertilizer to promote plant growth. Urea and formaldehyde, by a new formulation reported to the American Chemical Society meeting in Chicago combine to give a granular material that, in moist garden soil, slowly makes nitrogenous food available to plants.

The new material has been named uramite by its developers, Drs. R. D. Kralovec and W. A. Morgan of the polychemicals department of E. I. du Pont de Nemours & Co.

Science News Letter, October 3, 1953