

GERONTOLOGY

Build Up Liver to Check Old Age Diseases

►MANY AN old person needs to have his liver built up, it appears from studies reported at the meeting of the Gerontological Society in Washington.

And there is a new drug, methischol, for doing this, Drs. Julius Pomeranze, J. I. Migden and B. Dubovsky of New York reported.

Methischol contains choline, which prevents fat deposits in the liver; inositol, which is one of the B vitamins; methionine, which is an amino acid needed to make protein, and vitamin B₁₂.

Fatty degeneration of the arteries, a serious form of what the layman calls hardening of the arteries, might even be checked by this drug. A daily dose of three of its chemicals, choline, inositol and methionine, tended to bring back to normal the ratio of large fat particles to total fatty particles in the blood, Dr. Thaddeus D. Labecki of the Mississippi Board of Health, Jackson, Miss., reported. Disturbance in this ratio is believed a factor in causing this kind of artery hardening.

The liver, Dr. Pomeranze pointed out, has a central position in the body's chemical activities, including those related to gland function and nutrition and the utilization of foodstuffs. When the liver grows old, along with the rest of the body, some of these processes may be affected. So-called degenerative diseases of aging, such as artery hardening, then result.

Tests on aged patients, Dr. Pomeranze reported, showed that 60% had abnormal liver function. When they were given the new drug, liver function returned to normal in some and showed less abnormality in others.

Science News Letter, September 20, 1952

AERONAUTICS

Extremely Powerful Jet Engine Developed

►THE TEN-YEAR age of jet propulsion for airplanes has passed another milestone with the development of a new turbojet engine, a single one of which is two and one-half times as powerful as the combined four reciprocating engines on the famous B-29 Superfortress. To develop this thrust of approximately 25,000 horsepower it utilizes an afterburner.

This powerful turbojet, developed by Westinghouse Electric Corporation, is a vastly improved version of the J-40 built by the same company and revealed about a year ago. The new engine is almost 25 feet long and 40 inches in diameter, and is an axial-flow, or straight-through, design which has become the standard in the industry. It is claimed to be the most powerful jet engine in the world.

What England claimed two months ago to be the most powerful turbojet in the

world is its new Olympus, said to have a thrust equivalent to 17,000 horsepower when traveling at speeds of 600 miles an hour. It is what is called a "two-spool" type, with a low-pressure compressor and a high-pressure unit in series. The low-pressure unit acts as a supercharger for the high-pressure compressor.

An important feature of the new Westinghouse engine is that it supplies constant speed drive for airplane accessories as an integral part of the engine itself. It is claimed to be the first turbojet so built.

This will permit designers to make substantial savings in weight and space in new planes, both vital factors in maintaining aircraft superiority. The engine itself provides important weight saving. It weighs 3,500 pounds, less than one of the engines now used in the B-29 Superfortress.

Science News Letter, September 20, 1952

PHYSICS

Industries Powered By Atom in Five Years

►BUSINESSMEN HAVE been warned not to let the atomic age catch them napping.

P. J. Lovewell of the Stanford Research Institute, Stanford, Calif., said that manufacturers, processors and power utilities will be among the first to be attracted by atomic energy's peacetime uses.

Atomic industrial processes may be introduced on a modest scale within five years, he said. In 10 to 20 years, the effect in the business world should be generally felt.

Businessmen should stay abreast of the latest industrial atomic energy developments so that their processes will not become outdated, placing them in "an untenable competitive situation," he warned.

Mr. Lovewell was one of 10 speakers to discuss the industrial applications of atomic energy in a symposium held in connection with the Seventh National Chemical Exposition staged by the American Chemical Society in Chicago.

Science News Letter, September 20, 1952

GERONTOLOGY

Sex Still Interesting To Oldsters Over 70

►INTEREST IN sex does not die even in old people, the Gerontological Society learned in Washington.

Reporting on a study of 200 old people averaging 74 year old, Drs. E. W. Busse, R. H. Barnes and A. J. Silverman of the University of Colorado Medical Center, told the meeting that sex frustration is an important cause of anxiety, especially in elderly women.

Although old people do not go to church as regularly as they did when younger, they still cling to their belief in God. They do not have as strong a need to atone for guilt, because as they grow old they do not do so many things they regard as wicked.

Science News Letter, September 20, 1952

IN SCIENCE

GERONTOLOGY

Metrazol Helps Aged With Arteriosclerosis

►THE WANDERING minds of old people with arteriosclerosis can be helped by treatment with metrazol, Dr. Theodore C. C. Fong of St. Elizabeths Hospital, Washington, told a joint meeting of the Gerontological Society and the American Psychological Association in that city.

Metrazol is one of the drugs used in the chemical shock treatment of the mentally ill, but in his work with old people, Dr. Fong did not give the drug in the massive doses which produce shock. Instead, he gave a small tablet by mouth four times per day. A group of 35 patients who had been mentally ill for from one year to 20 years were treated for about three months.

About half (48%) showed improvement. They became more alert and more cooperative and they had better appetite and felt better physically. The drug had no bad effect on their high blood pressure and the few distressing symptoms resulting from it, such as nausea in a few cases, were eliminated by reducing the dose.

Science News Letter, September 20, 1952

ENGINEERING

Dim Fluorescent Lamps By New Control System

►A MINOR disadvantage of fluorescent lighting has been conquered. As a result, fluorescent tubes now can be used in theaters, lighting displays, television studios and other places where lights must be dimmed.

As described to the Illuminating Engineering Society meeting in Chicago by General Electric lighting engineers John H. Campbell and Harry E. Schultz, fluorescent lamp brilliance now can be controlled with a twist of a knob.

Although regular incandescent lamps can be dimmed when the voltage is reduced, fluorescent tubes dim only slightly by that method. As soon as a critical point is passed, the lamps go off completely.

Embodying an especially designed ballast, the new system keeps the starting voltage at the proper level, but controls the current flowing through the tube. That regulates the brilliance of the light.

The control system allows fluorescent lamps to be dimmed from "full force" to a point at which they barely glow. The lamps can be turned on and off at any lighting level. The engineers said fluorescent tubes keep their original color when dimmed. Regular filament lamps become reddish.

Science News Letter, September 20, 1952

FIELDS

GERONTOLOGY

Older Pilots Pilot Airliners Safely

►PILOTING AN airplane is not just a young man's job.

Although the older airline pilot may not pass tests of hearing, vision in dim light and reaction time quite so well as the younger men, these physiological changes with age do not affect his ability to fly. A lowered score on the tests does not mean that he will fail on his flight checks. Age has no relation to accidents.

This reassurance came when Dr. Ross A. McFarland of the Harvard University School of Public Health examined about 300 airline pilots, aged from 21 to 60 years, and compared the test results with their ability to fly. He reported his findings to the Gerontological Society and the American Psychological Association joint meeting in Washington.

Science News Letter, September 20, 1952

BIOCHEMISTRY

Vitamin C Essential for Anti-Arthritis Cortisone

►VITAMIN C, the anti-scurvy vitamin from citrus fruits, tomatoes and strawberries among others, may be essential for adrenal gland production of its anti-arthritis hormone, cortisone.

Studies showing this are reported by Drs. C. D. Hughes, M. J. Swenson, G. K. L. Underbjerg and J. S. Hughes of Kansas State College, Manhattan, in *Science* (Sept. 5).

When guinea pigs get scurvy from lack of vitamin C, they also get very severe arthritis. Cortisone prevents this. But ACTH, pituitary gland hormone also effective in arthritis in humans, does not. ACTH acts by stimulating the adrenal gland to produce cortisone. Evidently, from the guinea pig studies, the gland cannot do this even under ACTH stimulation when it lacks vitamin C.

Science News Letter, September 20, 1952

PSYCHOLOGY

Leadership Jobs Best For Those Over 40

►THE JOBS in which men over 40 are most successful are positions of leadership, Dr. H. C. Lehman of Ohio University told the American Psychological Association and the Gerontological Society in Washington.

The President of the United States averaged 55 to 59 years of age prior to President Truman, Dr. Lehman said. Of the

two candidates this year, Eisenhower is slightly older than this figure, 62 this year, and Stevenson is young for the job, a mere 52. Truman was 61 when he entered office.

Leaders of industry and business average 60 to 89. College presidents average 50 to 54. Ambassadors are 60 to 64. And Supreme Court justices are from 70 to 74.

Science and other occupations which require individual creativity depend for their best work on men in their thirties. But positions of leadership, such as President, require not so much insight of the leader himself as the insight of other people about him.

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GERONTOLOGY

Old Age Will Not Kill, But Disease Will Get You

►NO MATTER how old you live to be, you will probably never die of old age. In fact, scientists question whether death from old age is possible, Drs. Raphael Ginzberg and V. Olsvary of the Mental Health Institute of Cherokee, Iowa, told the Gerontological Society meeting in Washington. Even the oldest people are finally carried off by some disease.

"The upper limit of age predetermined by our species has never been reached by a majority or even by a considerable minority of individuals," they told the meeting.

But if you want to try to see if you can be one of the few, if any, who live out your whole life span, go to the west north central states, these doctors advise. This is the area of greatest longevity in the United States.

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ENGINEERING

Research Rockets Soon May Reach 1,000 Miles

►MULTI-STAGE ROCKETS for research should roar 1,000 miles into space within the next five years, and single-stage rockets should climb to altitudes exceeding 500 miles.

Reporting to the American Society of Mechanical Engineers meeting in Chicago as part of the Centennial of Engineering, Milton W. Rosen and Richard B. Snodgrass, both of the Naval Research Laboratory, Washington, said that "sounding rockets are the ancestors of future space vehicles, but not the immediate ancestors."

The Wac Corporal, Viking and Aerobee sounding rockets used in scientific research already have carried seven tons of instruments 140 miles into the sky. German-developed V-2 rockets have lifted 20 tons of instruments to similar heights.

But the scientists said it was too early to discuss specific designs for manned satellites and space ships, because researchers have only begun to investigate the problems of keeping humans alive outside the earth's atmosphere.

Science News Letter, September 20, 1952

AGRICULTURE

For Better Potatoes: Cross Wild With Tame

►MORE AND better potatoes could be grown by crossing cultivated potatoes with disease-resistant wild potato plants, Dr. Frederick J. Stevenson of the U. S. Department of Agriculture declared at the American Phytopathological Society meeting in Ithaca, N. Y.

There are now 23 cultivated and about 150 known wild tuber-bearing species. Many of these wild plants are immune to various virus diseases.

Although some crossings of such wild and cultivated plants have been made, Dr. Stevenson said the future possibilities are great, and that the surface has barely been scratched so far in efforts along this line.

The wild species have been little used because nearly all are deficient in market and cooking qualities and yield, he said. Another deterrent has been the difficulty in making crosses between these and cultivated potatoes, because of differences in chromosome numbers which make some species incompatible with the common potato.

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GERONTOLOGY

Two Hours Work At Ages 70 to 80

►OLD PEOPLE between the ages of 70 and 80 are being employed for two hours daily and getting a small payment for their work in the Finsbury Borough in London.

This "most important experiment" in efforts to keep old people mentally and physically active, and therefore happy and healthy, was reported at the meeting of the British Association for the Advancement of Science in Belfast by Mrs. A. V. Hill, member of the advisory council for the National Corporation for Care of Old People.

Science News Letter, September 20, 1952

VETERINARY MEDICINE

Chemical Prevents Disease of Turkeys

►A CHEMICAL preventive of a disease that causes heavy loss of young turkeys was reported to the American Institute of Biological Sciences meeting in Ithaca, N. Y. The disease is hexamitiasis, and additions of small amounts of dibutyl tin compounds to turkey feed give protection.

Drs. W. C. McGuire and Neal F. Morehouse of Salsbury's Laboratories, Charles City, Iowa, found that many poultry medicinals, including five antibiotics, copper sulfate and whey, were ineffective. A combination of terramycin and penicillin was found effective but economically prohibitive.

Only 0.05% dibutyl tin maleate in the feed is considered a practical preventive against the disease.

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