

BIOCHEMISTRY

Old Men Grow Jovial From Hormone Treatment

► ELDERLY MEN improve physically and mentally from treatment with the synthetic male hormone, stanolone, studies at the National Heart Institute's laboratories in Baltimore, Md., show.

The benefits to body cell function were reflected by increased utilization of basic dietary ingredients of cell growth. The good effects were greater than those from improved diet alone.

The elderly men became more jovial and enthusiastic, and frequently volunteered statements about how well they felt.

The studies were conducted by Dr. Nathan Shock in collaboration with Dr. Donald M. Watkin, Miss Janis Parsons and Marvin J. Yiengst.

Advising against too much optimism as a result of the findings, Dr. Shock said, "This work should not be interpreted as endorsement for wide administration of such hormones. Much more research needs to be done in this and other research problems in aging. It is obvious that the ideal steroid hormone, for utilization in elderly people, is not yet available."

Stanolone, Dr. Shock also reported, produces certain undesirable side effects. It must be injected since it is not effective by mouth, and its use is sometimes followed by a painful reaction at the site of injection. It produces edema, a condition of "water-logged" tissues, in some individuals.

"These experiments have served to demonstrate that aged males retain the potentiality of responding to the anabolic (tissue-rebuilding) stimulus of the steroid hormone stanolone," Dr. Shock said.

Science News Letter, August 20, 1955

ARCHAEOLOGY

East German Communists Aid U. S. Scholar

► COMMUNISTS in East Germany are cooperating with an American scholar to aid in solution of a scientific super jigsaw puzzle, according to the University of Pennsylvania Museum.

Permission has been granted to Dr. Samuel Noah Kramer, the museum's cuneiform writing expert, to work in East Germany for "a couple of months" studying fragments of ancient Sumerian tablets.

Scientists have been working on the puzzle since fragments of thousands of ancient clay tablets were unearthed more than 50 years ago at Nippur, Iraq, by expeditions of the University Museum.

About 4,000 of the pieces are inscribed with Sumerian literary creations, the major remainder of the world's oldest literature. Practically all the tablets date from about 1700 B.C. Many are copies of works composed as long ago as 2000 B.C.

The Egyptians were creating literary works that long ago also, but they wrote

on papyrus, too perishable to survive.

Before scholars could read the text, the fragments of the tablets had to be fitted together. The cuneiform script of the ancient Sumerians also had to be deciphered. Dr. Kramer has devoted practically his entire scientific life to this painstaking work.

Most of the tablet fragments are located either in Philadelphia at the University Museum or in the Istanbul Museum in Turkey. But some of the pieces have been missing, a frustrating situation for a jigsaw puzzle worker. It is now known that these are at the Friedrich Schiller Universitw at Jena, in East Germany.

By themselves, the pieces in Germany are useless. And without them, the tablets in Istanbul and Philadelphia cannot be completely read. Access to the missing "links" will enable Dr. Kramer to complete his study.

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BIOCHEMISTRY

Drug Helps in Parkinson's Disease

► A DRUG of the antihistamine class has helped almost half of a group of patients suffering with the Parkinson syndrome, best known to the layman as shaking palsy, two physicians report in the *British Medical Journal* (Aug. 6).

The drug is called B.S. 5930. Chemically it is beta-dimethylaminoethyl-2-methylbenzyl hydrochloride. It was made by chemical changes in antihistamines such as Benadryl. The changes reduced the antihistamine effect but increased the anti-acetylcholine effect.

Of 67 patients treated, 43 were helped, 31 of them getting more benefit than from any other previous treatment. The drug is called a "most useful addition" to present drugs for this condition, though not all patients will be helped by it.

Its value was determined by a special testing procedure. The trials and results are reported by Dr. R. O. Gillhespy of the Dudley Road Hospital, Birmingham, and Dr. A. Hall Ratcliffe of Manchester University, Manchester, England.

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FORESTRY

National Forests Yield Record Timber Harvest

► NATIONAL FORESTS of the United States yielded the greatest timber harvest on record in the year ending June 30, the U. S. Forest Service reported.

A total of 6,328,229,000 board feet, worth \$70,760,440, were cut on national forests, compared with 5,365,113,000 board feet in the previous year. Value of the current timber crop was more than \$5,000,000 above fiscal year 1954.

The Forest Service said a stepped-up road-building program opened up previously inaccessible timber stands.

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MEDICINE

Develop Hospital Test for Polio

► A BLOOD TEST for polio that can be made quickly in any hospital or public health laboratory has been announced by Drs. Nathalie J. Schmidt and Edwin H. Lennette of the California State Department of Public Health laboratories, Berkeley, Calif.

More investigation and experience through practical application of the test are needed, the scientists state in their report to the *Journal of Experimental Medicine* (Aug. 1). But in each of 12 patients from whom polio virus was found in the stools, confirming the diagnosis, the new blood test showed both polio infection and the type of polio virus causing the disease.

The test is the kind known as a complement fixation test. It is essentially the same as one used in the Berkeley and other laboratories for routine diagnosis of many other virus diseases.

The California scientists developed it with the aim of creating a polio test that could be done with the same techniques and equipment used for other laboratory diagnostic tests. They think it will prove widely useful when more is known about its accuracy and reliability for diagnosing polio.

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BIOCHEMISTRY

Penicillin Product Has Effect on Growth

► ONE OR MORE products from the breakdown of penicillin, when it is no longer effective as an antibiotic, seem to stimulate growth in animals, report J. H. Taylor and W. S. Gordon of the British Agricultural Research Council in *Nature* (Aug. 13).

Penicillin's germ-killing power is not responsible for the boost in growth, they say.

Supplementing the feed ration with small doses of inactivated penicillin, given both by mouth and by injection, the scientists found that test pigs show essentially the same kind of growth benefits that whole, active penicillin gives.

Inactive penicillin gave an average growth rate increase of 9.4%, compared to 14.3% for active penicillin. This difference in effectiveness is not significant, the scientists say.

The ingredient in penicillin which causes the growth rate increase is probably an amino acid, penicillamine, a chemical that has already been shown to increase the growth rate of chicks.

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CE FIELDS

CHEMISTRY

Chance of New Fibers From Isotaxic Chemicals

► A NEW SOURCE of possible fibers for textiles and rubber-like products is being developed by Dr. Gulio Natta of the Milan Polytechnic School, Italy.

The source is a class of chemical polymers not heretofore singled out for fiber production. Isotaxic polymers is Dr. Natta's name for the class, which includes polypropylene and poly-alpha-butylene.

The special mark of isotaxic compounds is presence at intervals along the chain-like molecule of atomic groups that give the compound characteristic optical and crystalline properties. The carbon atom to which these groups are attached is known as an "asymmetric" carbon atom.

Two types of polymers formed from isotaxic compounds were described by Dr. Natta at the recent Fourth World Petroleum Congress in Rome. One, which is crystalline in structure, gives promise of forming fibers suitable for use in textile manufacture. The other, non-crystalline, type would be of a more rubber-like nature, according to Dr. Natta, and thus might increase the number of available synthetic rubbers.

Dr. Natta was among the official delegates from European countries to the 1951 meeting of the International Union of Pure and Applied Chemistry in New York who were excluded on account of passport difficulties because of the McCarran Immigration act.

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BIOPHYSICS

Harmful Plant Mutations Caused by Radiation

► HARMFUL MUTATIONS caused by irradiation exposure can prevent plants from manufacturing materials they need for life, an Australian geneticist, J. Langridge, reports in *Nature* (Aug. 6).

Practically all chlorophyll-bearing plants are able to synthesize all the organic materials they need for life from 14 simple elements, plus carbon dioxide and water, in the presence of sunlight.

Mr. Langridge found that exposure of the seeds of a small plant, *Arabidopsis thaliana*, to X-rays caused mutations in the hereditary setup that kept newly sprouted seedlings from converting the elements to needed materials.

One mutation kept seedlings from synthesizing thiamine, the base for vitamin B-1. The young plants had mottled seed leaves, and later the leaves had chlorophyll only at the tips. After a growth

lag, these plants were able to become green and grow again. Thiamine-deprived plants grew normally when chemical thiamine was fed to them.

Seedlings bearing another mutation showed early degeneration of the seed leaves and the plants died at the two-leaf stage. When supplied with nutrient-rich coconut milk, these plants began to grow slowly and eventually flowered.

Mutations of still another kind induced by X-rays prevented seedlings from developing chlorophyll. Feeding the sugar, sucrose, to the plants permitted them to grow and flower after a much longer interval than is normal.

Mr. Langridge, with the genetics department of the University of Adelaide, said that the biochemical mutations he discovered were probably only a few of those actually caused in the seeds, as many of the irradiated seeds could be expected to undergo mutations that would prevent them from sprouting.

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MEDICINE

See Safer Polio Vaccine From Virus Purification

► SAFER, MORE simply produced polio vaccine is foreseen as a result of a method of concentrating and purifying polio viruses announced in Philadelphia.

The method follows one developed for separating various components of blood plasma. Its adaptation to concentration and purification of all three types of polio virus was made by Drs. J. Smolens, A. Greene and L. Coriell of the Children's Hospital of Philadelphia and the University of Pennsylvania School of Medicine.

Essentially, the method consists in precipitation of polio virus from monkey kidney tissue culture medium by zinc lactate at the near freezing temperature of two degrees Centigrade. The precipitate, which contains more than 99% of the virus, is separated by spinning in the refrigerated angle centrifuge. Zinc is removed from the virus either by dialysis or by ion exchange resins.

Reporting the method in *Science* (Aug. 5), the Philadelphia scientists point out the following advantages:

"It provides a technique for safety testing of the finished vaccine, since any desired concentration may be effected.

"The process provides a simple way of removing various components of the medium, such as antibiotics, amino acids, and metabolites.

"It should simplify the production of the vaccine, since large volumes of virus may be conveniently and rapidly concentrated for processing and killing. This should make possible better standardization of virus inactivation with formaldehyde or other agents. With the removal of the growth medium, selection of a preservative and antigenic stability of the vaccine may no longer be a problem."

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MEDICINE

Mannequins on Tour for Atomic Medicine Study

► SEVEN HALF-BODY MANNEQUINS with artificial glands are touring the country to aid atomic medical studies, the medical division of the Oak Ridge Institute of Nuclear Studies has announced.

The mannequins are built to look as much as possible like the upper half of a human body. In their necks are artificial thyroid glands. These contain a mixture of radioactive barium and cesium. The mixture, called "mock iodine," substitutes for radioactive iodine which scientists use to test the health and functioning of the thyroid gland in patients.

This use of radioactive iodine has increased enormously during the past few years, but techniques used have differed widely. Consequently results have varied. It is with the hope of perfecting a uniform technique that will produce accurate results under all test conditions that the mannequins are making the rounds.

In New Orleans, Los Angeles, Boston, New York, Louisville, Ky., Madison, Wis., Little Rock, Ark., and at Oak Ridge, scientists will test the uptake of the mock iodine by the mannequin's thyroid. Each scientist will use his own technique. The results in each scientist's test of each mannequin will then be studied and compared. Between 300 and 400 test results are expected for study.

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ICHTHYOLOGY

Deadly Disease Kills 80% Of Young Brook Trout

► A DEADLY disease is killing up to 80% of the young brook trout in three West Virginia hatcheries, placing the state's hatchery program in danger, Dr. S. F. Snieszko of the Leetown Microbiological Laboratory, Kearneysville, W. Va., has reported.

The disease, unknown until last year, strikes at the pancreas of young brook trout, causing the infected fish to whirl violently as if they were literally "writhing in pain." It attacks only fingerlings.

Called infectious pancreatic necrosis, this new killer appeared first in January, 1954, at the Leetown Fish and Wildlife Service Station, W. Va.

By July, 1954, it had spread to hatcheries at Dorcas and Marlinton. While still taking its large toll of brook trout fingerlings in these hatcheries, it is not known to have moved into other areas, Dr. Snieszko said.

Cause of the disease is unknown, he said, although a virus is suspected. Investigations into the cause and prevention of the trout-killing malady are being made at the Leetown Laboratory.

Dr. Snieszko and his co-workers, Dr. E. M. Wood and W. T. Yasutake, describe the disease in the *Archives of Pathology* (July).

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