

MEDICINE

Sex Hormones Fight Age

Sex hormones can restore virility to some men, stop some kinds of cancer when properly used. Misuse can activate cancer or lead to sterility.

► **SEX HORMONES**, responsible in part for turning boys and girls into men and women, can restore virility to some men, cushion the changes of middle age, brighten the minds of old women, check some kinds of cancer and stop its pain.

Improperly used, these same hormones can activate cancer and lead to sterility. Medical scientists have no doubt of this. And while still searching for better forms of sex hormones for medical treatment, they warn against use of any form of sex hormone preparation without a doctor's advice.

The sex hormones are steroid chemicals. They are produced by the ovaries and the testes. The outer part of the adrenal glands, producer of the anti-arthritis hormone, cortisone, also produces steroid hormones which are much like the hormones from the sex glands.

Scientists call the female sex hormones estrogens and the male hormones androgens. Testosterone, said to be the most powerful androgen, has been obtained from fresh bull testes and also has been made synthetically from cholesterol. Development of a new form of testosterone, said to be longer acting and more than twice as powerful as the older forms, has just been announced.

Medically, testosterone is used for young men who have lost both sex glands by surgery or disease and to help bring maturity to boys who are slow in development. In the first case it is replacement medicine, something like insulin for diabetics. In the second, the results are not lasting unless the pituitary gland in the head is able to produce, and the sex glands respond to, a pituitary hormone which stimulates production of androgen by the testes.

Testosterone is dangerous for middle-aged, would-be Romeos. It can stimulate the growth of dormant cancer cells present in the prostate glands of many men. These dormant cancers are most often found in the prostate glands of men in their forties and fifties.

For older men with advanced prostate cancers, the estrogens, or female hormones, are often given. Pain is relieved and the cancers that have spread to the bones are checked. Many patients have been able to return to work and get a longer lease on life.

Both androgens and estrogens, male and female hormones, are used to treat cancer in women, the particular hormone depending on the patient's age, type of cancer and other factors determined by the phy-

sician. This type of treatment is still being studied.

Sex hormones should not be confused with what the boys in the smoking room mean by sex. These chemicals play a necessary part, but only a part, in sexual behavior. Psychological factors and acquired behavior patterns also play their parts.

The androgens and estrogens are not sex specific, either. Both are present in varying amounts in normal men and women. And the stallion, one of the most "masculine" of animals, produces an extremely large quantity of estrogens, or so-called female sex hormones.

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PUBLIC HEALTH

Record Low Achieved For Maternal Mortality

► **A RECORD** low maternal mortality rate, a halving of the measles death rate and significant drops in the death rates from tuberculosis and infantile paralysis occurred in the United States during 1950 compared with 1949.

The death rate for cancer remained about the same for the two years, which might be considered a gain since it means at least a temporary halt in deaths from this disease.

The record low maternal death rate is estimated at 7.2 deaths of mothers per 10,000 live births.

The heart disease death rate increased slightly in 1950, U. S. Public Health Service vital statistics show.

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CHEMISTRY

Gas from Cheap Fuel; Wood Waste for Wallboard

► **LOW COST** manufactured gas is produced by a new process from powdered fuel and air, a French chemist told the World Chemical Congress in New York.

Peat, lignite, brown coals, soft coal or atomized fuel oil are mixed with steam and either air or oxygen. Chemical action occurs and the process is continuous, Dr. Kurt Baum of the Pan-European Industrial Plants Co., Paris, explained.

Many thousands of tons of wood waste that would otherwise be lost can be made into strong hard wallboard by a process described by Dr. Louis G. Ricciardi of the Polytechnic Institute of Brooklyn. Instead

of using expensive resins small amounts of simple inexpensive chemicals are used to unite chemically with the lignin in the wood to cause it to become an effective binder.

In addition to sawdust, chips, shavings, slabs and edgings of wood, the process can use straw, sugarcane bagasse, sisal fiber, coconut fiber, and waste from other vegetation.

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PHYSICS

First Space Ships To Have Flying Saucer Shape

► **FLYING SAUCERS** may well become a reality, but they will belong to this world, "not to visitors from Mars," Ernest G. Reuning, an astronomer working at the U. S. Army's Map Service in Washington, believes.

A saucer- or disk-like shape is quite possible for our first space ships, he says, for aerodynamic reasons—because of the effect of air passage on the ship when it is in the denser layers of our atmosphere. If the ram-jet principle of propulsion is used for early space ships, as Mr. Reuning believes likely, slot-like exhausts give about the largest heating surface per volume of gas thrown back, he has calculated.

These slots would be widest at the edge, narrowing down at the center, in effect making the entire ship look like an oversized flattened ram-jet engine, giving it a somewhat flounder-like appearance.

Mr. Reuning, who bases his calculations on information available to the general public, discussed the possibilities of travel in outer space at a meeting of the National Capital Astronomers in Washington.

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INVENTION

Improved Casein Fibers Hardened with Metal Salts

► **TEXTILE FIBER** of casein from milk will be more durable and have improved chemical and physical properties, it is claimed, by a process utilizing titanium, zirconium or tin salts as a hardening agent.

The inventors claim they have found that they obtain an improved casein fiber by treating the artificial material after coagulation, but before drying, in a water solution of a salt of a metal selected from the group consisting of titanium, zirconium or tin. In addition to improved chemical and physical properties the resulting fiber is curly and has acquired wool-like properties.

Inventors of the process are John F. Corwin, Unadilla, John R. Calhoun, Bainbridge, and Thomas M. Buzzo, Unadilla, N. Y. Rights are assigned to the Borden Company of New York City. The patent number is 2,567,184.

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