

MEDICINE

Sex Antagonism in Hormones Clue To Possible Cancer Foe

**Female Sex Hormones Cause Cancer in Animals;
Male Hormone Checks It; Chemicals Now To Be Tested**

BECAUSE of a suspected antagonism between male and female sex hormones regarding their cancer-causing properties, scientists have a new clue to what may be an anti-cancer chemical. The clue appears in an account of sex hormone investigations by Drs. J. R. Murlin, C. D. Kochakian, C. L. Spurr and R. A. Harvey of the University of Rochester. (*Science*, Sept. 22)

Various chemicals are soon to be tested for anti-cancer-producing properties, it is stated. These are probably not the known sex hormones but substances of similar chemical composition closely associated with the sex hormones. Whether or not these possibly anti-cancer chemicals will have any practical value in the fight against human cancer cannot yet be determined. The work so far has been on laboratory animals.

Female sex gland grafts and female sex hormones, it had previously been found by other investigators, caused the development of breast tumors in male mice, although these animals do not

normally develop breast tumors as female mice do. This suggested a possible antagonism between the male and female sex hormones with regard to cancer-causing properties which the University of Rochester scientists set out to investigate.

The male sex hormones, they found, "quite definitely inhibited (checked) the growth of the Brown-Pearce tumor" when this rabbit tumor was implanted in the animals. Some of the sex hormones also checked the growth of secondary tumors. These were hormone extracts from kidney excretions. Some pure hormone preparations, however, had no effect on either the growth of primary tumors or the development of secondary ones. This suggested that the hormone extracts contained substances other than the hormones which were responsible for checking the tumor growths. These substances have been separated from the hormones in the extracts and will be tested for their effects on cancer growth.

Science News Letter, October 7, 1939

GEOGRAPHY

Panama Canal Not First To Link American Oceans

IF PLANS for the Nicaraguan Canal, now revived, actually go to the digging stage, America will have achieved three—yes, three—out of four much-talked-of canals for linking the Atlantic and Pacific.

The four main canal routes which have at various times been considered by American engineers are:

First, the Panama route, now a 25-year-old reality.

Second, the route across southern Nicaragua, linking in the San Juan River and Lake Nicaragua. Planned as far back as 1825, this project is now being studied in conference by the Nicaraguan government and its neighbor Costa Rica, while American engineers

are again at the task of surveying the ground problems.

Third, the route across the narrowest part of Mexico, the Isthmus of Tehuantepec. A canal at this point, so much nearer the States than Panama, would bring Honolulu more than 1,200 miles closer to New York.

Fourth, a route farther south than any of these, across Colombia near its Panama border. This route actually has once been dug—dug and practically forgotten. It was America's first achievement in joining the oceans, undertaken with no thought of this significance, by a Spanish monk, Antonio de Cereso, and Indian laborers back in 1788.

Recent discovery of an old map show-



OLDER THAN PANAMA

This old map shows, marked with an "r," America's first canal linking the Atlantic and Pacific, the Canal of Rospadura.

ing this canal is reported by the WPA historical records survey. Premilas F. Becnel, going over historic documents at Tulane University's Department of Middle American Research, unearthed this map, and realized its historic value. Continuing the search for more records of the Canal of Rospadura, as it was called, Mr. Becnel and a research student assistant have since located eight more maps showing the canal, and have traced its history.

The canal joined the San Juan River, which has an outlet on the Pacific, with a tributary of the Atrato River, which flows into the Gulf of Darien on the Atlantic side.

America's first ocean-to-ocean canal was dug, not for trade, but to settle a boundary argument between two families.

It was a shallow ditch, but during periods of high water Indians began to find the route handy in their canoes, thus unknowingly becoming first to take a short cut water route from one coast of America to the other. Cacao beans for Indians and white people were the early commercial cargoes that crossed the continent via this canal.

A Philadelphia engineer in 1852 found

the Raspadura ravine route so filled up that even his light-draft canoe had to be dragged through a canyon on dry land before he could get to the San Juan River and the Pacific.

Science News Letter, October 7, 1939

PSYCHOLOGY

Roads Should Be Planned With Normal Driver in Mind

A GREAT deal of attention has been given lately to the accident-prone driver. Officials have worried over how to remove from the highway those motorists who seemed to act as catalyst in producing dangerous crashes.

Perhaps too much emphasis has been placed on the fact that certain individuals figure in more than their share of highway tragedies. For, after all, the great bulk of accidents do happen to the "normal" driver who has never before had a serious mishap and may never have another.

A recent survey of accidents in Connecticut made from Highway Research Board statistics by Dr. T. W. Forbes of Yale's Bureau for Street Traffic Research indicates that if all the drivers who had more than two accidents in a period of three years were to have been taken from the highway, the total accident record for the next three years would have been reduced by less than four per cent.

Highway engineers, Dr. Forbes urges, should devote their principal attention to the problems of the normal driver—the driver who is ordinarily cautious and ordinarily skillful.

Highways should be so planned that the normal driver can operate on them safely with his ordinary habits of driving.

"Capabilities which must be considered in connection with traffic design and control include such items as driver judgments in overtaking and passing cars so as to allow the driver sufficient time and distance for this maneuver," Dr. Forbes said in a report to the *Journal of General Psychology*; "the speed of driver reactions in connection with the placement of warning signs and the design of entrances and exits to high speed highways; visual characteristics of the driver in order to design signs which will be easily legible and which will give the driver time enough to act in the appropriate fashion; color and attention values in connection with the design and placement of traffic signs and signals; and many other capacities which play a part in certain phases of the operation of the motor vehicle upon the highway."

Science News Letter, October 7, 1939

PSYCHOLOGY

Europe Darkened and Silent Is Risking Mental Health

Surveying Mental Casualties of World War, Experts Urged Music, Bright Uniforms, Keeping Friends Near

DARKENED Europe, marching grimly into war without song, may be a Europe striding toward mental illness. Drab uniforms, darkened theaters, and an ever-present reminder of asphyxiation slung from the shoulders are not good for mental health.

In the World War, nearly 50% of all casualties were victims not of bombs and shrapnel but of the collapse of their mental defenses. This was revealed when at the close of the war a committee of French and American psychiatrists made a study of the psychoneuroses of war for the International Congress on Military Medicine that met in The Hague in 1931.

Some of these cases may be prevented in the present conflict by better selection methods—by excluding the emotionally unstable, the men already displaying mental disease in its early stages, borderline cases. The United States has already set up units throughout the country for detailed study of recruits by psychiatric experts. It is probable that other nations have also given consideration to this problem of rejecting the mentally unfit.

But war brings terrific strains for the mind of the normal person, be he combatant or stay-at-home. And the present conflict has been called a "war of nerves."

The separation of families is one of the strains of war. During the World War men were deliberately scattered so that if defeat wiped out a unit, the blow would not fall with concentrated force on one community of home folks.

This was a mistake, one of the experts found. The comfort of being with other soldiers from home more than overbalanced the effect of concentrated casualties on the civilian population, it was concluded. Psychiatrists now are wondering about the effects of breaking up of city families on the mothers and children. In peace time, psychiatrists do not recommend that parents send children away to spare them hardships; family affection fills a real need in the child's life and should be strengthened rather than weakened by times of trial.

Banishment of music, movies, dances, would not be approved by the experts who surveyed the psychic wreckage of the World War. They even recommended that the camouflage of khaki be sacrificed for the mental lift of bright colors and distinguishing emblems.

"The use of attractive uniforms with all their emoluments, music and all the trappings that go into a martial setting, have a beneficial effect upon the morale of military personnel," declared Dr. W. F. Lorenz, Professor of Neuropsychiatry at the University of Wisconsin, in his contribution to the official report.

"The drab, ill-fitting unattractive uniform may be highly effective to hide from the enemy, but it falls far short of building up any esprit de corps. Even though the bright colors might make troops more visible, such a tactical disadvantage would be more than offset by the soldier's better frame of mind.

"One would therefore advocate as good mental hygiene in military medicine that at least divisions, or better regiments, be distinctly and brightly uniformed, thus promoting the herd instinct and serving to prevent the psychoneuroses of war."

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PHYSICS

Developing Device to Test New Finishes of Fabrics

LATEST National Bureau of Standards project is to devise a mechanical method of measuring the "you-love-to-touch" qualities of cloth—the softness and harshness of textile materials. Textile industry, acting through the American Society for Testing Materials, is cooperating. New types of finishes making fabrics spot-proof, mildew-proof, crease-proof, changing glossy appearance to dull and dull to glossy have brought need of a scientific method of comparing finishes more accurate than just feeling them.

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