

PSYCHOLOGY—NUTRITION

Color Blindness Improved By Treatment With Vitamin A

Men Turned Down for Defense Jobs Are Able, After Treatment, To Pass the Same Tests They Failed

COLOR vision can be so improved by taking vitamin A that men turned down for defense jobs because of color blindness were able to pass the tests and get the jobs, it was reported in Nashville, Tenn., to the Southern Society for Philosophy and Psychology by Drs. Knight Dunlap and Robert D. Loken, of the University of California at Los Angeles.

This new use of vitamin A in the war effort followed research by Dr. Dunlap and Dr. Loken. Two groups of eight individuals each were matched for degree of color blindness. Those in one group were given one capsule containing 25,000 units of vitamin A each day for twelve days. Those in the other group were given capsules which they thought contained the vitamin but which contained only milk sugar.

Those taking the vitamin A reduced their total errors on a color blindness test from 88 before treatment to 38 afterwards. There was practically no change in the group which had had the sugar.

And here is what happened when six other color blind young men were treated, usually with one capsule a day of vitamin A: Age 24, 100 capsules reduced errors from 10 to 5; age 28, 10 capsules reduced errors from 10 to 3; age 25, 8 capsules a day for seven days reduced errors from 18 to 0 on one test and from 5 to 0 on another; age 23, 25 capsules reduced errors from 12 to 0 on one test and from 12 to 3 on another; age 24, 25 capsules reduced errors from 10 to 0 on one test and from 7 to 3 on the other; age 28, 60 capsules reduced errors from 21 to 0 on one test and from 12 to 0 on the other.

Time is important in some cases, but heavy dosages for a short time may clear up other cases, the investigators said.

Color blindness is not something that always exists in the same degree if it exists at all, the investigators stressed. Cases vary, they said, from those in which there is a very slight deficiency in color vision through the average, which is considered "normal," to cases

in which the color vision is so far above the average that they may well be called "super-normal."

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Success Lifts Morale

IF A MAN gets a raise in pay, a promotion or even a word of praise and a handshake from his supervisor on the job, his morale is improved for the

MEDICINE

Deaths During Childbirth May Be Due to New Disease

Clots of Blood and Other Material Found Sometimes To Enter Circulatory System and Be Carried to Lungs

A NEW and sometimes fatal disease of childbirth previously diagnosed under such vague terms as "obstetric shock," was described by Dr. Paul E. Steiner and C. C. Lushbaugh of the University of Chicago, at a meeting of the American Association of Pathologists and Bacteriologists in Philadelphia.

Death is caused by clots of blood and other material in connection with childbirth, which gain entrance to the mother's circulatory system and are carried to her lungs. Here extensive damage is done to the blood vessels which may hemorrhage.

Dr. Steiner suggests that the same phenomenon may cause death of the unborn child.

While the authors' conclusions are based on the deaths of only eight mothers and experiments with animals, they will attempt to show that this disease is "a relatively common cause of sudden death during labor."

If they succeed, they will have explained why women in labor sometimes suddenly undergo shock and die for reasons the usual autopsy does not show. Dr. Steiner and Mr. Lushbaugh made their discovery of the cause of death in

whole war effort as well as for his particular task.

This was indicated by a report to the Society by Prof. Robert F. Creegan, of Cumberland University.

Every victory in a specific endeavor, said Prof. Creegan, raises the individual's morale for that type of endeavor and for all types of striving which compose the life quest. On the other hand, extreme deprivation in any form, economic, emotional, or other is incompatible with high morale among citizens, he indicated. "The well nourished individual," he said, "makes the good citizen and soldier."

America and other democracies have definite advantages over our enemies as regards morale because in a democracy, the individual citizen knows that he gets a reward and appreciation for the work he does.

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such cases by the procedure of examining the lungs of the victims with a microscope.

Their examination revealed the blood vessels of the lungs to be clogged with foreign bodies which were identified as having come from the womb. When this type of material was injected into the blood stream of animals, it again passed to the lungs, producing similar effects.

Just how the material got into the blood stream of the mothers is not so clear. The authors suggest it might have been due to unusually powerful spasms of labor which tore the mothers' placental membrane and so permitted uterine debris to enter the blood stream. Here it would be carried immediately to the lungs and lodge in the vessels. Sudden showers of these foreign particles lodging in the lungs would produce the symptoms of shock, preceded by a chill.

Six of the eight mothers the authors studied had chills at the beginning of their illness. It is suggested therefore, that a chill during labor does not necessarily mean the start of a bacterial infection, but rather the clogging of the blood vessels

of the lungs as described. This is particularly likely if the mother has difficulty in breathing.

While the diagnoses of Dr. Steiner and Mr. Lushbaugh were necessarily made

after death, they conclude that diagnosis during life should become possible in the future, and with it, a means of saving these mothers.

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ANATOMY

Growth-Rate of Human Body Fixed Even Before Birth

Body Proportions Follow Smooth Pattern of Growth From Earliest Moments to Adulthood, Despite Spurts

LONG before we are born, probably from the hour of conception itself, the rate at which our bodies will grow has been established, and with it also the rates of growth of the various parts of our bodies. So declared Prof. Earl W. Count of New York Medical College before the New York meeting of the American Association of Anatomists.

"Normally bodily proportions follow a regular and smoothly-running pattern of growth from conception to adulthood," said Prof. Count. "That is, they adjust to each other in a way to trace a smooth curve on the graph. Spurts of growth, sometimes even disconcertingly obvious to parents of adolescents, particularly boys, do not seem to alter the actual proportions of the body; these alterations have been going on regularly ever since the little animal started; but what might otherwise have taken decades to accomplish is telescoped into the first part of life. Spurts increase the pace; they do not remodel the shape.

"Perhaps this behavior is one of the characteristics by which mammals evolved away from the reptiles. It is frequently believed that reptiles continue to grow in a simple measured way as long as they live."

Cutting of the molar teeth appear to be landmarks in the history of human body growth. From the beginning of pre-birth existence until the first permanent molar appears, one type of curve records the rate of growth. From the eruption of the first molar until that of the second, a rapid spurt occurs; then a second and more complicated change in growth rate follows, until the cutting of the third molar, or wisdom tooth, marks the end of bodily growth.

Strangely enough, the second spurt in growth does not affect the magnitude of the end result, because it also brings with it an eventual slowing-down. If only the first spurt occurred, without the inter-

vening of the second, it would probably "have continued indefinitely into giant-dom."

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Hormones Are Engineers

SEX hormones, or gland secretions, act as "engineers" in directing the development of unborn animals, Dr. Vera Danchakoff of the University of Lausanne, Switzerland, stated before the meeting.

Dr. Danchakoff worked with a considerable range of animals, including mammals, birds, fishes and amphibians. In general, she found it possible to change the direction of sexual development by injecting the hormone of the opposite sex. That is, if the developing embryo were destined to become a female (which can be told by microscopic examination of its cell chromosomes), it could be induced to develop the external sex organs of a male by sufficiently heavy doses of male sex hormone. The opposite change could be produced by female sex hormone in a genetically male embryo.

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Plant Hormone Stimulates

A HITHERTO unidentified sex hormone produced by plants, strongly stimulating sexual maturation in female animals, was reported by Dr. Eliseo T. Gomez, U. S. Department of Agriculture physiologist. Extracts from freshly cut or frozen young oat and corn plants, Dr. Gomez found, would produce evidence of sexual maturity when fed to female rats only three weeks old, which did not appear in untreated "control" animals until they were a good eight days older. Puppies showed similar signs of precocious maturity when they were nursed by mothers (or foster mothers) receiving the plant extracts in their diets.

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Obesity From Gland Injury

I NJURY to the hypophysis, small but important gland embedded beneath the brain, is capable of causing dwarfism and great bodily fatness, Dr. Albert W. Hetherington of Northwestern University Medical School told his colleagues at the meeting. His findings were based on experiments with rats, whose hypophyses were purposely injured by surgical means. The rats were subsequently killed and the glands microscopically examined. Five animals, in which the glands had been entirely destroyed, had developed as fat dwarfs; the remaining three, which had small fragments of their hypophyses, had developed normal body length, but these also were very fat.

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Cyanide Speeds Maturity

CYANIDE compounds, deadly in higher concentrations, seem to have a decided effect in speeding the onset of maturity. Dr. John R. Borland, of Hofstra College and New York University, reported concerning tadpole-to-frog transformations which he had observed in his laboratory.

The tadpoles were fed on cabbage, which is believed to form exceedingly minute amounts of cyanide compound.

Dr. Borland also tried tadpoles on a diet of spinach, with a highly dilute solution of methyl cyanide added to their water. These also became frogs in less than normal time. When the cyanide was added to the water in which cabbage-fed tadpoles lived, it had an additional speeding-up effect on their development.

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High Pressure Effects

PRESSURES of 6,000 pounds (three tons) per square inch, instead of the mere 15 pounds of atmospheric pressure, applied to developing frog eggs produce marked effects on the subsequent life careers of the eggs and tadpoles, Prof. Roberts Rugh and Prof. Douglas A. Marsland of New York University stated.

In their experiments, Profs. Rugh and Marsland applied high pressure to frog eggs at various stages of development. Eggs in which the sperm nucleus was present but not yet united with the egg nucleus were especially sensitive, he found. Of such eggs only about 2% ever reached the tadpole stage. After sperm and egg nuclei had united, the eggs proved much more resistant; some 90% of them eventually became tadpoles.

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