

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.

Science News Letter, April 11, 1942

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 giantdom."

Science News Letter, April 11, 1942

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.

Science News Letter, April 11, 1942

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.

Science News Letter, April 11, 1942

Obesity From Gland Injury

INJURY 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.

Science News Letter, April 11, 1942

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.

Science News Letter, April 11, 1942

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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