

PSYCHOLOGY-ANATOMY

Children Should be Judged By Bone Growth, Not Age

Young People Handicapped Because They Are Expected To Live up to Age Rather Than to True Maturity

BECAUSE parents and teachers expect all young people of the same age to be equally mature, many boys and girls are forced to keep a pace in school and social activities for which they are not fitted, Dr. T. Wingate Todd told the scientists attending the opening meeting of the Conference on Adolescence Research in Cleveland last week.

Dr. Todd, who is director of the Brush Foundation and head of the department of anatomy of the Western Reserve University school of medicine, pointed out that the development of the bones of the youngster is a much better indication of his maturity than is his chronological age. The sudden and rapid spurt of growth which is characteristic of adolescence occurs in one type of child between the thirteenth and fourteenth birthdays. In another type it does not come until the age of sixteen or seventeen. At the same age these two types would differ greatly in maturity.

"Since our only criterion so far has been chronological age," Dr. Todd said, "we compel both the precociously developed and the retarded to attempt to fit themselves into a scholastic, social, and intellectual environment for which they are not apt. . . . If these youths and girls succeed in overcoming their handicap it is largely due to their own ability. Parents, in ignorance of the facts, have rarely the intuition to be helpful and are themselves embarrassed in the face of anomalies of behavior for the occurrence of which they have at best no understanding and too often but little sympathy.

"The problems of adolescence," Dr. Todd concluded, "call for parental education even more imperatively than they demand study and diagnosis of the adolescent himself."

'Teen Age Growth

Growth in the "teen" age was discussed by Dr. Charles B. Davenport, director of the Department of Genetics at the Carnegie Institution of Washington,

when he addressed the first meeting of the Conference. Before the age of eleven, the average height and weight of girls is less than that of boys, Dr. Davenport said, but at about the eleventh year, the girls catch up with their boy friends and even shoot beyond them in a sudden spurt toward adulthood. By the age of fifteen, however, they have lost their advantage, and the boys get ahead again.

Dr. Davenport said that one of the most striking aspects of the development of adolescent children is this extremely sudden spurt of physical growth. It usually occurs for boys at about six months after their fourteenth birthday; for girls at about twelve years.

The average increase in weight during the single year when this spurt takes place is over 12½ pounds for boys and over 12 pounds for girls. Individual children sometimes gain much more than that. One of the boys studied put on 19.8 pounds during his fifteenth year, and one of the girls outdid him by adding over 22 pounds during her twelfth year.

Dr. Davenport has been trying to discover what gives the impetus to this abrupt and rapid development through experiments on mice in his laboratory.

Important Glands

Some of the glands of the body are much more important than others in promoting the development from childhood to maturity, Dr. R. G. Hoskins, endocrinologist of Harvard University, reported.

The thyroid, because of its over-activity in many young girls, has been thought to have some important role in bringing about physical maturity. Dr. Hoskins told of experiments with rats, however, that indicate that this important gland in the neck serves merely to aid in the proper nourishment of the body and to maintain the normal state of health necessary to development.

The thyroid and parathyroid glands, the liver and the islands of Langerhans continue to function in the second ten



DR. T. WINGATE TODD

Who thinks that boys and girls should be allowed to keep pace in school and social activities with their bone development and not with their age in years. Dr. Todd is director of the Brush Foundation and head of the department of anatomy of Western Reserve University, Cleveland.

years of the child's life practically as they did during the first ten, Dr. Hoskins said. Certain other of the glands of internal secretion play a more important part in bringing about maturity.

Turning Child Into Adult

Dr. Hoskins gave credit to the pituitary, that little gland at the base of the brain, for having a very important if not predominant part in turning the child into an adult. This gland, he believes, acts with a group of nervous mechanisms to control growth, sexual activity, and fat metabolism. He told of studies which indicate that the disease of overgrowth technically called gigantism and also precocious puberty are brought about by the substances poured into the body by the pituitary gland. Inactivity of the gland results in dwarfism and sexual infantilism.

The suprarenals, those glands that lie just above the kidneys, are also very important in making the boy manly and the girl womanly. Over-activity of this gland may make the girl strikingly masculine.

The pineal, thymus, and the gonads are the other glands of internal secretion listed by Dr. Hoskins as vitally important in producing the changes of adolescence.

Science News Letter, October 25, 1930