15 (271)

Physiological Age.

By C. WARD CRAMPTON.

[*From the Department of Physical Training, Board of Education, New York City.*]

The term *physiological age* refers to the stage of development in contradistinction to age in years and months, which is the usual method of designating age. Various evidences of physiological age are tooth appearance, pubescence, change of voice, menstruation, menopause, etc.

Pubescence is an evidence of sexual ripening and the beginning of adolescence. For the purpose of record, three physiological groups are distinguished corresponding to three successive stages of development (1) prepubescence, (2) pubescence, (3) postpubescence. The first group is characterized by an absence of hair upon the pubis, the second is an intermediate stage, the third group have hair upon the pubis. The data of the results below are taken from 4,500 New York High School boys, and are divided into half year age groups designated by the middle age value. The following table shows the percentage composition of each chronological age:

Age.	12.75	13.75	13.75	14.25	14.75	15.25	15.75	16.25	16.75	17.25	17.75
Prepubescent	69%	55	41	26	16	9	5	2	1	0	0
Pubescent	25%	26	28	28	24	20	10	4	4	2	0
Postpubescent	6%	18	31	46	60	70	85	93	95	98	100

It gives also the relative size of the subgroups. These facts have been hitherto disregarded and the chronological age group treated as if it were homogeneous.

These subgroups in each age exhibit characteristic differences in physical measurements which differences are far greater than the difference between contiguous year groups.

At the age of 15.75 the postpubescent group (85 per cent. of all) are 34 per cent. heavier, 32 per cent. stronger and 9 per cent. taller than the prepubescent group (forming 5 per cent. of all at the same age) as indicated on the next page:

	Weight. kilos.	Height. cm.	Strength. kilos.
Prepubescent.	36.7	149.8	32.5
Pubescent.	41.8	153.1	30.4
Postpubescent.	49.3	162.6	42.9

The differences in weight, height and strength between prepubescents and postpubescents of the same age are equal to the differences between age groups that are 6 to 8 years apart.

Conclusion. — Age groups are heterogeneous and cannot serve as a unit for reference and experiment. We must substitute groups based upon physiological age.

16 (272)

Gastric peristalsis after section of the vagi and splanchnic nerves.

By **JOHN AUER.**

[*From the Department of Physiology and Pharmacology of the Rockefeller Institute for Medical Research.*]

Some time ago I described a method by means of which gastric peristalsis in the rabbit could be studied under normal conditions, without any operative interference whatsoever. The method is briefly as follows: If the hair of the epigastrium of a rabbit, fed well two hours before, is cut short, the stomach is largely outlined through the abdominal wall, and the peristaltic waves may be studied by inspection or by registering the waves with a tambour.

As the stomach is provided with extrinsic nerves (vagi and splanchnic) and with an intrinsic system (plexuses of Meissner and Auerbach) it was of interest to study the mobility of the stomach when deprived partly or entirely of its extrinsic innervation. This question has been studied by a number of observers, most recently and thoroughly by Cannon who used the X-ray method on cats. By means of the simple and physiological method outlined above the effects of sectioning the vagi or the splanchnics or both were studied. The vagi were, in this series, invariably cut below the diaphragm in order to preserve the vagus innervation of the thoracic viscera.

First series. Subdiaphragmatic section of the vagi only.—Two