they have not been previously published. The subjects were patients from the University Hospital and all but one were males.

Date	Name	pH of blood at 20°	Disease
October 7, 1916.	Bloomquist	7.40	— —
October 7, 1916.	Rotay	7.41	— —
October 14, 1916.	Rotay	7.45	— —
October 20, 1916.	Carlson	7.35	— —
October 20, 1916.	Charlotte Clarine	7.36	Polycythemia
October 25, 1916.	Watson	7.50	— —
October 25, 1916.	Charlotte Clarine	7.40	
October 25, 1916.	Keene	7.45	Nephritis
November 5, 1916.	Sweeney	7.45	Nephritis

2912

Comparative solubilities of creatinine and guanidine picrates.

GRACE MEDES. (Introduced by J. F. McClendon).

[*From the University of Minnesota Medical School, Minneapolis, Minn.*]

Reports of the appearance of guanidine in the urine, in cases of tetany, have depended upon the precipitation of guanidine picrate from urine, after it has been freed of inorganic salts. No attempt is made apparently to remove creatinine. Guanidine picrate could be obtained free from creatinine picrate by this method only in case the former was much more highly soluble than the latter in the solvents (water and 50 per cent alcohol) employed. To test this point a comparative study of the solubilities of guanidine and creatinine picrates in water and 50 per cent alcohol was made.

Solubilities (Gram solute: Grams Solution).

Temperature degrees	Water Guanidine Picrate	Creatinine Picrate	Temperature degrees	50 per cent alcohol	
				Guanidine Picrate	Creatinine Picrate
92	1:115.7	1:63.6	74	1:60.2	1:32.2
78	1:199.1	1:96.6	57	1:113.2	1:58.2
48	1:599.4	1:240.3	37	1:252.2	1:132.8
32.5	1:1112.2	1:380.0	19	1:523.9	1:276.4
21.0	1:1648.4	1:549.2	8	1:830.1	1:447.0
7.5	1:2898.5	1:819.2			

Creatinine picrate is more soluble in water and 50 per cent alcohol than is guanidine picrate, and therefore cannot be removed quantitatively from a mixture of the two salts by extraction with either of these solvents.

2913

The growth in mass of the various regions of the body in the fetal period.

RICHARD E. SCAMMON.

[*From the Department of Anatomy, University of Minnesota, Minneapolis, Minnesota.*]

It has been pointed out by Calkins,[1] Calkins and Scammon[2] and others[3] that the growth of a large number of the external dimensions of the human body in the fetal period is directly proportional to the growth in total body-length, and that the probable values of these dimensions in this period may be expressed by the general formula:

$$D = aL \pm b \quad (1)$$

where "D" is the dimension in question, "L" is the total body-length, "a" is a constant in the form of a decimal fraction, and "b" is a second constant in the form of an absolute number. In accord with the law of developmental direction the "b" constant is positive for dimensions of the head and neck, negative for dimensions of the extremities and positive, negative or zero for measurements of the trunk, depending on their position.

If this law holds true for all external bodily dimensions the volumes of the major body-parts should bear a similar relation to the volume of the body as a whole, or:

$$P_v = aB_v \pm b \quad (2)$$

where "P_v" is the volume of any major body-part, "B_v" is the

[1] Calkins, L. A., *Anat. Rec.*, 1921, xxi, 47, and *Am. J. Obstet. and Gyn.*, 1922, iv, 109.

[2] Calkins, L. A., and Scammon, R. E., PROC. SOC. EXP. BIOL. AND MED., 1925, xxii, 353.

[3] Akiba, T., *Fol. Anat. Japon.*, 1924, ii, 189.