

## 259 (2219)

The determination of galactose in the presence of glucose.

By K. F. CORI, G. W. PUCHER, G. T. CORI.

[*From the State Institute for the Study of Malignant Disease, Buffalo, N. Y.*]

Folin and Wu's method for blood-sugar has been adapted to the determination of galactose glucose mixtures. The method is based on the fact that copper solutions of different alkalinities give different reduction values for galactose, but the same for glucose. It was also found that Bertrand's as well as the Myer-Benedict method give the same reduction values for glucose and galactose. The use of the latter methods in combination with that of Folin and Wu is unsatisfactory due to errors that may be introduced by the discrepancies for glucose values obtained on the same blood.

## 260 (2220)

Energy metabolism of premature infants.

By M. ELIZABETH MARSH (by invitation).

[*From the Physiological Laboratory of the University of Rochester, and the Obstetrical Division of the Highland Hospital, Rochester, N. Y.*]

Energy metabolism studies have been made in 82 periods of observation upon 21 prematurely born infants including those previously reported.<sup>1</sup> Both the oxygen and carbon dioxide, and thus the R. Q., were determined for each separate period and heat calculated from the oxygen consumption. Temperature within chamber was usually kept between 24° C. and 28° C. Infant was fed (amount of feeding determined by weighing before and after), placed in the chamber and a preliminary period run to allow a lapse of 30 minutes between time of feeding and the beginning of the first period. An average minimal heat production per sq. m. per hour (Lissauer formula) of 25.0

---

<sup>1</sup> Murlin and Marsh, *Proc. Soc. Exp. Biol. and Med.*, 1922, xix, 431.

calories on infants over 24 hours of age was obtained as compared with 26.75 calories obtained by Benedict and Talbot<sup>1</sup> for normals from 2 to 8 days of age. These observers found a rather constant heat production from second to seventh day, the average of all basal periods being 27.87 cal. per sq. m. per hr. as compared with 25.72 calories for our prematures.

In comparing maximum with minimum heat values for each infant an average of 44.5 per cent. increase was obtained. Percentages varied from 5.7 with slight restlessness to 88.77 with hard crying 36 minutes ( $\frac{3}{4}$  of the period). Comparing the increases obtained in succeeding periods of the same observation in which all the factors, except the activity, were the same, an average of 16.5 per cent. was obtained. Increases varied from 2.5 per cent. with very slight restlessness to 40.5 per cent. with crying 16 minutes of a 33-minute period. Minimal metabolism in children of comparable ages averages 31 cal. per sq. m. per hr. after feedings of from 60 to 84 grams breast milk and 24 cal. after feedings of from 25 to 35 grams.

## 261 (2221)

### A test for peristaltic activity.

By PIERRE A. FISH.

[*From the Cornell University, Ithaca, New York.*]

The agent used is the red dye known as Sudan III. Its advantages are that it may be used in very small amount thus interfering very little, or not at all, with the normal processes in the alimentary tract. The amount used for man is from 50 to 70 milligrams ( $\frac{3}{4}$  to 1 grain). It is soluble only in a fatty medium or in fat solvents. Taken with, or just after a meal, it is not impossible that a slight amount may be combined with the fat of the meal and absorbed to a slight extent; otherwise it is not, apparently, susceptible to the alimentary secretions. The tests have not been interfered with by any absorption that may have occurred. The red color of the dye is essential for the test.

The rapidity with which the dye, mixed with the ingesta, will

---

<sup>1</sup> Benedict and Talbot, Carnegie Institute Pubs., No. 233.