

450 grams more than the first, Newman, who weighed 4.770 kilos, and he was  $3\frac{1}{2}$  cm. longer, but as the formula contains only one variable and that the weight, it gives a surface area for the second child less than for the first, though it is undoubtedly greater. The formula is apparently very accurate for well-nourished infants but not for the long and poorly nourished.

The heat directly determined and calculated for a square meter of body surface in twenty-four hours was in the two cases 994 and 1,093 calories. These figures correspond closely with the calculated heat in three of Rubner's cases, viz., 1,006, 1,143 and 1,090. The average  $\text{CO}_2$  per square meter per hour was: Newman, 15.24; McG., 17.19.

#### HEAT PRODUCED BY INFANTS.

Newman (3 mos.)

1.45-2.45 P. M.		2.45-3.45 P. M.		3.45-4.45 P. M.	
Calculated.	Found.	Calculated.	Found.	Calculated.	Found.
17.17	17.01	15.96	13.62	15.86	14.91
		15.31	15.72	15.89	13.05
		18.16	13.85		
		13.06	13.42	17.47	13.48
		17.82	15.05	15.31	14.29
McG. (8 mos.)					
15.87	15.19	16.28	14.57	16.66 18.02	15.18 15.64

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#### Studies on human nephritis.

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#### PRELIMINARY REPORT.

The object of this investigation was to determine the functional capacity of the kidneys of nephritics with regard to their power of eliminating nitrogenous material, water and salts, and to determine the influence of the "protective therapy" on the kidney efficiency.

We have up to the present the reports of nine cases that have been investigated for periods of two to ten weeks.

The patients after admission to the ward, except when an immediate change in diet was necessary, were placed on a general hospital diet for about three days. The urine and feces were collected and analyzed. After this preliminary test the patients were placed on a diet composed of two quarts of milk, with enough cream and sugar to supply the necessary calories. This diet contained 12 to 13 grms. of nitrogen, 3 grms. of NaCl and about 1,500 c.c. of water. A normal individual should reach nitrogenous equilibrium on about the third day of its administration. Several of our nephritic cases behaved in the following manner:

Case.	Duration of Period.	Average Daily N Intake "A."	Average Daily N Output in Urine "B."	B/A Per Cent.
E.B.	11 days.	12.5 gm.	8.89 gm.	71.1
W.C.	11 days	12.5 gm.	6.91 gm.	55.3

The relationship between the eliminated nitrogen to the ingested nitrogen, expressed in percentages we consider an index of the kidney's nitrogen eliminative power (N.E.P.) when on this standard diet.  $A$  minus  $B$  minus the amount of nitrogen found in the feces, represents the amount of nitrogen retained in the system due to the kidney inefficiency. That the nitrogen is not retained because of the building up of protein, but because of kidney inefficiency, is evident from the fact that  $N/SO_3$  ratio in the urine of these cases is very low, and corresponds to the amount of nitrogen ingested.

Case M. with quite marked uræmic symptoms eliminated 4.51, 5.75 and 5.57 grms. of nitrogen per day, with 0.645, 1.113 and 0.97 grms. of inorganic  $SO_3$  for the respective days. The  $N/\text{inorg. } SO_3$  ratio during these days was 6.99, 5.17 and 5.72, *i. e.*, the patient eliminated about three times the amount of inorganic  $SO_3$  that is ordinarily eliminated with the same amount of nitrogen.

The N.E.P. of our patients E.B. and W.C. was raised very considerably after several weeks of a "Protective" diet, *i. e.*, a diet containing less nitrogen than the N.E.P. as found in a preliminary test.

The mechanism for the removal by the kidney of one constitu-

ent of the urine may be impaired while the others remain perfectly intact. In case H. with an acute exacerbation of a chronic affection of the kidney due to an attack of tonsilitis, the NaCl eliminating power was absolutely lost. No precipitate could be obtained with  $\text{AgNO}_3$  after the removal of the albumin, whereas on the same days the patient eliminated water, nitrogen and  $\text{SO}_3$  perfectly well.

## CASE H.

Date.	Volume of Urine.	Sp. Gr.	Total N.	NaCl	Inorg. $\text{SO}_3$ .	$\frac{\text{N}}{\text{Inorg. } \text{SO}_3}$	Diet.
12/25/10	2405	1010	11.80	0.00	0.8021	14.7	General
12/26/10	2390	1011	11.32	0.00	1.0940	10.3	Salt free.
12/27/10	3120	1007	12.11	0.00	—	—	Salt free.

Similar results were also obtained in case Ba.

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### A note on the nature of oxyphilic granulation.

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An aqueous solution of eosin will give with ferric chloride a precipitate which has a deep red color. If very dilute solutions are used, say 0.1 of 1 per cent. ferric chloride, and an eosin solution which is just barely pink, no precipitate will be visible on mixing the two, but the pale pink of the eosin changes to a deeper shade of red, and the fluorescence, which is quite noticeable even at this dilution, disappears. If the dilution of the eosin solution used be increased so that these color changes can no longer be distinguished with certainty, it is possible to demonstrate the reaction by the addition of a colloidal suspension of Witte's peptone, or of sodium oleate.

On the addition of such a solution, which should be sufficiently strong to cause a well marked opalescence, the red color of the iron-eosin stain will at once be apparent, especially where sodium oleate has been used, in which case a flocculent precipitate stained a rich red will appear. The examination under the microscope of such a precipitate, reveals an appearance which, in respect to color