

4915

Seasonal Variation in Hemoglobin.

VIRGINIA E. PLATT AND R. G. FREEMAN, JR.

(Introduced by E. G. Miller, Jr.)

From the Nursery School of the Child Development Institute, Teachers College, Columbia University.

The following study was undertaken to determine the possible seasonal variation of hemoglobin in a group of children between the ages of 21 and 44 months. The children in this study were attending a nursery school in New York. They came from a superior social group and their dietary and environmental conditions were above the average.

The method used for the hemoglobin determinations was that of Cohen and Smith.¹ The accuracy of this method had been previously checked by Karshan and Freeman.² The blood was taken in the morning between the hours of 10 and 11, and at the same period in each month.

TABLE I.

	Age	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
1—L. B.	29 mo.	13.1	12.4	12.5	11.6	.....	11.3	12.1
2—R. C.	21 "	13.2	11.0	11.6	11.2	14.4	11.4	12.8
3—R. C.	21 "	13.1	12.0	12.1	10.8	13.3	13.3	12.5
4—M. E. B.	33 "	.....	13.3	12.1	.....	12.2	13.5	13.1
5—R. E.	29 "	14.2	11.4	11.4	11.0	11.6	11.4	14.7
6—C. F.	31 "	11.7	10.5	12.3	11.5	12.1	11.5	12.3
7—C. H.	26 "	15.0	10.5	10.0	11.7	12.6	10.8	12.9
8—M. L. H.	27 "	16.1	12.4	12.9	12.9	13.2	13.9	14.6
9—G. M.	34 "	14.1	11.8	11.2	11.2	12.3	12.7	12.8
10—G. P.	28 "	.....	11.3	11.0	11.5	13.2	11.6	11.8
11—J. R.	34 "	13.0	11.0	11.2	11.3	13.5	12.5	12.5
12—F. S.	25 "	14.3	12.4	12.2	11.4	13.4	12.9	13.0
13—D. T.	31 "	12.7	.....	11.7	.....	.....	10.9	12.6
14—H. A.	37 "	16.4	13.4	13.8	.....	.....	15.5	13.8
15—W. B.	35 "	.....	12.2	.....	12.2	.....	13.1	.....
16—A. D.	38 "	16.4	13.1	12.3	.....	.....	14.0	12.2
17—M. E. H.	38 "	13.6	11.6	11.2	10.2	12.8	10.9	12.8
18—J. H.	37 "	16.4	12.2	11.2	11.8	.....	13.3	11.0
19—J. H.	41 "	13.7	10.8	10.8	11.8	.....	13.3	11.4
20—J. H.	33 "	13.0	12.5	12.7	12.3	12.2	12.1	10.7
21—G. L.	39 "	16.6	12.0	12.1	12.4	.....	13.0	11.6
22—E. M.	35 "	13.0	12.4	12.4	11.0	12.9	.....	12.2
23—M. A. R.	44 "	15.3	12.0	13.8	.....	.....	14.1	11.8
24—D. S.	38 "	14.2	12.5	14.5	.....	.....	.....	13.7
25—D. S.	33 "	13.5	11.4	11.2	9.8	.....	12.4	12.8
26—N. S.	44 "	16.6	12.1	12.5	11.9	.....	.....	11.4
27—W. W.	35 "	15.0	12.2	11.9	12.5	12.8	12.9	11.1
28—M. W.	39 "	15.0	11.1	11.7	.....	.....	.....	12.4
29—G. W.	33 "	16.4	11.6	11.3	12.6	13.9	14.3	12.5

¹ Cohen, B., and Smith, A. H., *J. Biol. Chem.*, 1919, xxxix, 489.² Karshan, M., and Freeman, R. G., Jr., *J. Lab. and Clin. Med.*, 1929, xv, 74.

Table I shows the individual figures (gm. of hemoglobin in 100 cc. of blood) for each child for each month that he was under observation. The age given is that at the time the first determination was made.

Williamson³ using the spectrophotometric method showed that the sex difference at this age was not significant, and in obtaining the averages shown in Table II the 2 sexes were used together. The same author also showed the small difference between the values in the second and third and fourth years, so that in this paper all ages were used together.

TABLE II.

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Average	14.4	11.9	12.0	11.5	12.8	12.8	12.6

It will be seen that, without exception, the February figures are all below those of November and that there is a rise in May but not to the November point, suggesting that the peak is probably during the summer months. The low point corresponds to the time of greatest incidence of upper respiratory tract infections⁴ and to that of slowest growth⁴ suggesting some common factor at work, probably to be found in environmental conditions to which city children are subjected during the winter months.

4916

The Stimulating Efficiency of the Normal Primary Alcohols.*

WILLIAM H. COLE AND JAMES B. ALLISON.

From the Physiological Laboratory of Rutgers University, New Brunswick.

As reported recently,¹ the rhythmic movements of the cirri of barnacles are sensitive indicators of environmental stimulation. A study has been made of the stimulating efficiencies of the first 4 normal primary aliphatic alcohols on *Balanus tintinabulum*.† The

³ Williamson, *Arch. Int. Med.*, 1916, xviii, 505.

⁴ Emerson, H., *J. Am. Med. Assn.*, 1927, lxxxix, 1326.

* Part of the expenses of this study has been met by grants from the American Association for the Advancement of Science (1929), and from the Society of Sigma Xi (1929-30), for which grateful acknowledgement is made.

¹ Cole, W. H., *J. Gen. Physiol.*, 1929, xii, 599.

† The experiments on *Balanus* were done at the Hopkins Marine Station, Pacific Grove, Calif., to the director of which the senior author is indebted for many courtesies.