Leech Method of Blood Analysis; A New Micro Method.

5. Determination of Blood Urea.*

By

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Encouraged by T. Sato's¹⁾ work concerning the accuracy of cholesterol figures obtained from the blood obtained through a leech's body, I tried urea determination by the leech method. At first thought it did not seem remunerative to undertake urea determination with blood obtained indirectly through the leech, even though the leech method would prove to be accurate for anorganic ingredients of the blood. The actual investigation has, however, shown the applicability of the leech method not only to anorganic ingredients of the blood (cf. papers of Uga^{2,3)} and Yoshida⁴⁾), but also to such an organic ingredient as cholesterol.¹⁾ The present paper is the result of an application of the leech method in the case of urea determination.

Method.

Taking into consideration a possibly rapid decomposition of urea in the body of a leech, I used only such worms as would suck very well. If the leech had become very plum, which took usually about 10 to 20 minutes, blood was taken by means of a syringe and used for the determination immediately. The chemical method used was that devised by Yoshimatsu.⁵⁾

* 18th Report on Micro Method.

1) T. Sato, Tohoku J. Exp. Med., 1932, **19**, 162.

2) Y. Uga, Tohoku J. Exp. Med., 1932, **19**, 166.

3) Y. Uga, Tohoku J. Exp. Med., 1934, **24**, 324.

4) M. Yoshida, Tohoku J. Exp. Med., 1934, **22**, 467.

5) Sh. Yoshimatsu, Tohoku J. Exp. Med., 1929, **13**, 1.

TABLE II.

Comparison of blood urea figures between the direct and the indirect methods in human cases.

No. of cases	Age (years)	Sex	Diagnosis	Human blood obtained directly by the puncture of ear lobe	The same blood obtained indirectly through body of leech	Difference (%)
No. 1	7		Nephritis postscarlatinosa	24.8	23.2	-6.6
No. 2	4		Nephritis acuta	27.7	27.1	-2.2
No. 3	6		Nephritis acuta	16.7	16.6	-0.7
No. 4	21/2		Nephrosis	38.2	37.3	-0.4
No. 5	4		Nephritis acuta	37.0	36.0	-2.7
No. 6	7		Nephritis postscarlatinosa	31.2	29.7	-4.8
No. 7	21/2		Nephrosis	32.4	30.2	-6.7
						-3.7