

Our results (Table I) indicate that in uncomplicated osteoporosis circumscripta of the skull the serum phosphatase activity is within normal limits or is only slightly increased (cases 1-5). When associated with typical Paget involvement of the skeleton, however, considerable increases in serum phosphatase activity occur (cases 8-17), of the same order as those seen in Paget's disease not associated with osteoporosis circumscripta. Our results are in accord with, and may be regarded as further substantiation of the view that increased phosphatase activity of the blood in bone disease is an expression of an increase in cellular processes leading to bone formation.<sup>14</sup>

Serum phosphatase was determined by A. Bodansky's method;<sup>15</sup> serum calcium by Clark and Collip's modification<sup>16</sup> of the Kramer and Tisdall method; serum inorganic phosphorus by the Kuttner-Lichtenstein method,<sup>17</sup> with corrections for deviations from Beer's law.<sup>18</sup>

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#### Distribution of Blood Groups and Agglutinin M Among Indian "Blackfeet" and "Blood" Tribes.\*

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The early work on the distribution of blood groups among the various races led to the hope that results would indicate clear-cut racial relationships, but the significance of this line of investigation has been overestimated.<sup>1</sup> This was the conclusion of Grove,<sup>2</sup> who

<sup>14</sup> Robison, R., *The Significance of Phosphoric Esters in Metabolism*, New York University Press, New York, 1932.

<sup>15</sup> Bodansky, A., *J. Biol. Chem.*, 1933, **101**, 93.

<sup>16</sup> Clark, E. P., and Collip, J. B., *J. Biol. Chem.*, 1925, **63**, 461.

<sup>17</sup> Kuttner, T., and Lichtenstein, L., *J. Biol. Chem.*, 1930, **86**, 671.

<sup>18</sup> Bodansky, A., *J. Biol. Chem.*, 1932, **99**, 197.

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<sup>1</sup> Wiener, A. S., *Blood Groups and Blood Transfusion*, 1935, C. C. Thomas, Springfield, Ill.

<sup>2</sup> Grove, E. F., *J. Immunol.*, 1926, **12**, 251.

in her studies on various aborigines found branches of the same race showing widely different incidences of the 4 blood groups. Previous reports by Coca and Deibert<sup>3</sup> and Snyder<sup>4</sup> supported the view that American Indians are characterized by a high percentage of group O, but more recently Matson and Schrader<sup>5</sup> described other tribes of Indians ("Blackfeet" of Montana and "Blood" of Canada) with a very high incidence of group A. Shanklin<sup>6</sup> found a high percentage of group O among certain Arabian tribes, others having high values for A and B.

All these studies, however, were limited to one set of factors—the 4 blood groups. Other agglutinable blood properties, the factors M, N, and P and the subgroups A<sub>1</sub> and A<sub>2</sub>, and the peculiar taste reaction to para-ethoxy-phenyl-thio-urea, were shown to exhibit characteristic racial differences<sup>7, 8, 9</sup> and obviously future racial investigation of all these properties may yield more significant data.

The present report deals with a study of the incidence of the blood groups and the factor M in pure-blooded "Blackfeet" and "Blood" tribes. The results show that while these Indians differ radically from the Kansas Indians in the distribution of the 4 blood groups, they behave alike in having a very low incidence of M negative reactions, in comparison with the incidence among white individuals. The contrasting figures for the M reactions among the "Blackfeet" and "Blood" Indians on the one hand, and among white individuals of Montana on the other, were obtained with the use of the same anti-M serum.

These tests also serve to confirm the original observations of Matson and Schrader on the high incidence of the A factor in the "Blackfeet" and "Blood" tribes.

Observations were made also on the frequency of taste-blindness to para-ethoxy-phenyl-thio-urea in these Indians and, in harmony with the M results, these tests show that the incidence of non-tasters distinctly approximates the low figure (6%) previously found by Levine and Anderson in the Kansas Indians, rather than that found in tests made simultaneously on white individuals of Montana (28%). Accurate figures cannot be given at this time on account

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<sup>3</sup> Coca, A. F., and Deibert, O., *J. Immunol.*, 1923, **8**, 487.

<sup>4</sup> Snyder, L. M., *Am. J. Phys. Anthropol.*, 1926, **9**, 233.

<sup>5</sup> Matson, G. A., and Schrader, H. F., *PROC. SOC. EXP. BIOL. AND MED.*, 1933, **30**, 1380; *J. Immunol.*, 1933, **25**, 155.

<sup>6</sup> Shanklin, Wm., *PROC. SOC. EXP. BIOL. AND MED.*, 1935, **32**, 754.

<sup>7</sup> Landsteiner, K., and Levine, Ph., *J. Immunol.*, 1929, **16**, 123.

<sup>8</sup> Landsteiner, K., and Levine, Ph., *J. Immunol.*, 1930, **18**, 87.

<sup>9</sup> Levine, Ph., and Anderson, A. S., *Science*, 1932, **75**, 497.

TABLE I.

	Group				M	
	0	A	B	AB	+	-
Pure Blackfeet and Blood Indians (this study)	36 20.5	138 78.4	0 0	2 1.1	149 98	3 2
Pure Kansas Indians (Landsteiner and Levine <sup>7</sup> )	156 76.1	49 23.9	0	0	195 95.1	10 4.9
White, Montana (this study)	84 48	59 34	26 15	6 3	130 75	43 25
White, New York (Landsteiner and Levine <sup>7</sup> )	758 44.4	648 37.9	226 13.2	76 4.5	1382 80.9	326 19.1

The first line of figures indicates absolute numbers examined; the figures below give the corresponding percentages.

Of the "Blackfeet" Indians, 24 were in Group O, 82 in Group A, and 1 in AB; of these only 2 were M negative. Of the "Blood" tribes, 12 were in Group O, 56 in Group A, and 1 in AB. M tests were made on 45 of these specimens and only one was negative.

of difficulty of interpreting certain taste reactions, as for instance, those reported as sweet.

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## Susceptibility to Lysozyme of Staphylococci.

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In his review on lysozyme Fleming<sup>1</sup> has stressed the fact that the extreme susceptibility of many air saprophytes has resulted in a general impression that pathogenic organisms are not affected by this enzyme. He cites his own and other work to prove that pathogenic organisms are attacked if the concentration of lysozyme is great enough. Ridley<sup>2</sup> reported that the ability to resist lysozyme seemed to determine pathogenicity. Regarding staphylococci, Neisser<sup>3</sup> quotes Nakmura and also Kopp as presenting evidence that susceptibility to lysozyme is to be regarded as indicating that a staph-

<sup>1</sup> Fleming, A., *Proc. Roy. Soc. Med.*, 1932, **26**, 71.

<sup>2</sup> Ridley, F., *Proc. Roy. Soc. Med.*, 1928, **21**, 1495.

<sup>3</sup> Neisser, M., *Handbuch der path. Microorg.*, Kollé, Kraus and Uhlenuth, Berlin, 1927, **4**, 437.