

phosphate mixtures was considered. The buffer values of phosphate mixtures ($\text{Na}_2\text{HPO}_4 + \text{KH}_2\text{PO}_4$) of various strengths and hydrogen-ion concentrations, were therefore determined, the results appearing in Table 9.

From this study four interesting facts are evident: First, the buffer value of blood is greater than that of $1/15$ molecular phosphate mixtures and approximately that of $1/5$ molecular mixtures; second, the buffer value is greater at neutrality than in more alkaline mixtures; third, the dialysates exhibit buffer values comparable to those obtained by adding the indicator directly to the original mixtures, but at a

TABLE 9. BUFFER VALUE OF PHOSPHATE MIXTURES ($\text{Na}_2\text{HPO}_4 + \text{KH}_2\text{PO}_4$)

	1/10 Molecular		1/15 Molecular	1/5 Molecular	
	Undialyzed	Dialysate	Undialyzed	Undialyzed	Dialysate
pH	7.55	7.4	7.5	7.5	8.1
0.1 acid	7.45	7.35	7.2	7.5	7.45
0.2 acid	7.4	7.25	7.15	7.45	
0.3 acid	7.3	7.15	7.15	7.45	
0.4 acid	7.2	7.1	"	7.4	7.45
0.1 alkali	7.6	7.5	7.5	7.5	7.45
0.2 alkali	7.7	7.65	7.55	7.55	
0.3 alkali	7.8	7.75	7.4	7.55	
0.4 alkali	8.0	7.8	"	7.6	7

ONE FIFTIETH MOLECULAR		ALL READINGS ON UNDIALYZED MIXTURES			
pH	7.05	7.5	7.9	8.1	
1 acid	7.05	7.2	7.85	7.65	
0.2 acid	7.0	7.15	7.75	7.85	
0.3 acid	6.95	7.1	7.7	7.7	
0.4 alkali	7.05	7.3	7.95		
0.5 alkali	7.0	7.2	8.0		
0.3 alkali	7.1	7.4	8.1		

uniformly more acid level; and, finally, the more concentrated the mixture employed, the less marked is the discrepancy between the undialyzed mixture and dialysate.

Attempts to increase the buffer value of the blood by intravenous injection of phosphate mixtures into animals and into a human case (Table 6, Case 4) failed, but demonstrated the following facts:

1. The phosphate mixtures are relatively nontoxic.¹²

12. See, also, Greenwald, L., Jour. Pharmacol. and Exper. Therap., 1915, vii, 57.