2910

The dissociation constant of orthocresol-tetrachlorophthalein.

MYRTLE HUNDLEY (by invitation) and J. F. McCLENDON.

[*From the University of Minnesota Medical School, Minneapolis, Minn.*]

Since colorimeters of the Duboscq type are usually found in medical laboratories, it seemed desirable to add to the list of indicators which can be used in such instruments for the determination of the pH. Dr. Ralph T. K. Cornwell kindly sent us specimens of orthocresol-tetrachlorophthalein and iso-orthocresol-tetrachlorophthalein described by Orndorff and Patel,[1] and E. L. Arnold.[2]

We found the dissociation constant of the first named indicator to be 1.78×10^{-9}, showing a fifty per cent color change at pH = 8.75. In this study we used the borate buffers of Palitzsch, checked them against the hydrogen electrode, and determined the dissociation by the amount of color measured by the Duboscq colorimeter (assuming 100 per cent dissociation in a 0.1 *N* NaOH solution). The indicator is only very slightly soluble and therefore has to be used in rather a deep layer of fluid.

The other indicator is even less soluble and has two dissociation constants close together.

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Some hydrogen electrode measurements on normal blood.

J. F. McCLENDON and HENRY ULRICH (by invitation).

[*From the University of Minnesota Medical School, Minneapolis, Minn.*]

Owing to the fact that the pH of blood is usually determined colorimetrically, it seems desirable to compile all the hydrogen electrode measurements that we can get. Therefore, the following measurements, although not very recent, are here given since

[1] Orndorff and Patel, *J. Am. Chem. Soc.*, 1925, xlvii, 863.

[2] Arnold, E. L., *ibid.*, 1924, xlvi, 489.

they have not been previously published. The subjects were patients from the University Hospital and all but one were males.

Date	Name	pH of blood at 20°	Disease
October 7, 1916.	Bloomquist	7.40	— —
October 7, 1916.	Rotay	7.41	— —
October 14, 1916.	Rotay	7.45	— —
October 20, 1916.	Carlson	7.35	— —
October 20, 1916.	Charlotte Clarine	7.36	Polycythemia
October 25, 1916.	Watson	7.50	— —
October 25, 1916.	Charlotte Clarine	7.40	
October 25, 1916.	Keene	7.45	Nephritis
November 5, 1916.	Sweeney	7.45	Nephritis

2912

Comparative solubilities of creatinine and guanidine picrates.

GRACE MEDES. (Introduced by J. F. McClendon).

[*From the University of Minnesota Medical School, Minneapolis, Minn.*]

Reports of the appearance of guanidine in the urine, in cases of tetany, have depended upon the precipitation of guanidine picrate from urine, after it has been freed of inorganic salts. No attempt is made apparently to remove creatinine. Guanidine picrate could be obtained free from creatinine picrate by this method only in case the former was much more highly soluble than the latter in the solvents (water and 50 per cent alcohol) employed. To test this point a comparative study of the solubilities of guanidine and creatinine picrates in water and 50 per cent alcohol was made.

Solubilities (Gram solute: Grams Solution).

Temperature degrees	Water Guanidine Picrate	Creatinine Picrate	Temperature degrees	50 per cent alcohol	
				Guanidine Picrate	Creatinine Picrate
92	1:115.7	1:63.6	74	1:60.2	1:32.2
78	1:199.1	1:96.6	57	1:113.2	1:58.2
48	1:599.4	1:240.3	37	1:252.2	1:132.8
32.5	1:1112.2	1:380.0	19	1:523.9	1:276.4
21.0	1:1648.4	1:549.2	8	1:830.1	1:447.0
7.5	1:2898.5	1:819.2			