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The dissociation constant of orthocresol-tetrachlorophthalein.

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

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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.

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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.