LXV. BROMOXYLENOL BLUE. A TRUE-NEUTRALITY POINT INDICATOR.

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In a previous article on xylenol blue, synthesised, and described in this Journal, [1922, 1] by the writer it was shown that the double working ranges of utility coincide with those of thymol blue. The pair of indicators thus share with certain other pairs of homologous indicators the property of anomalous unshifted p_H ranges. Advantage was taken of this property in the case of xylenol blue to obtain a solution of twice the intensity of thymol blue.

When the p_H range of the bromo-derivative of xylenol blue was investigated in the same manner as that of the unbrominated indicator, and compared with bromothymol blue in identical concentrations and strengths of indicator in buffer solutions of p_H 6.0–7.6, the series in each case was similar. The analogy of xylenol blue with thymol blue in respect of range of p_H is thus continued on bromination.

It is easier, however, to brominate xylenol blue than thymol blue, and this was accomplished by adding in the cold, with constant shaking of the reaction flask, 3.1 parts bromine to 1 part of xylenol blue suspended in 10 parts glacial acetic acid. After standing overnight, the pale pink crystals were thoroughly drained by suction and recrystallised from dry boiling toluene, in which the product is much more soluble than the similarly prepared bromocresol purple. It separated white and crystalline on cooling. Submitted to analysis, the product was found to be a *dibromoxylenol sulphonephthalein*.

0.3400 g., fused with caustic potash and sodium peroxide, gave 0.2250 g. silver bromide and 0.1432 g. barium sulphate.

S	5.76 %	; calculated for $C_{23}H_{20}O_5Br_2S$	5.63 %
Br	28.2 %	„ „ „	28.15 %

Bromoxylenol blue, like bromothymol blue, can have its working range halved by the addition of bromocresol purple, as shown in an earlier paper by the writer [1922, 2]. The resulting mixed indicator can then be used where a blue end-point of Sørensen value about 6.8 is desired in a titration.

REFERENCES.

- Cohen (1922, 1). *Biochem. J.* **16**, 31.
— (1922, 2). *J. Amer. Chem. Soc.* **44**, 1851.