TABLE I

OXIDATION OF POLYHYDRIC ALCOHOLS WITH SODIUM PERBORATE

| Alcohol | Wt. of alcohol in g. | Wt. of ferrous sulfate in g. | Acetic acid Volume in cc. | Acetic acid Strength in *N* | Wt. of sodium perborate in g. | Time of reaction in min. | Yield of oszaone, g. | Yield of oszaone, % | Melting point of osazone in °C. Found (uncorrected) | Melting point of osazone in °C. Fenton and Jackson[2] |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene glycol | 1.55 | 1.3 | 30 | 4 | 4.293 | 60 | 0.588 | 9.88 | 168 | 169.5 |
| Glycerol | 2.5 | 0.25 | 35 | 8 | 4.668 | 15 | 0.96 | 13.25 | 131 | 130–131 |
| Erythritol | 2.5 | 1.25 | 25 | 8 | 3.508 | 30 | 1.53 | 25.0 | 166 | 167 |
| Mannitol | 5.0 | 1.25 | 35 | 3 | 4.720 | 360 | 1.55 | 20.9 | 198 | 197–198 |
| Dulcitol | 2.0 | 1.0 | 15 | 3 | 1.89 | 480 | ... | ... | 205 | 206 |
| Sorbitol | 2.0 | 0.9 | 15 | 3 | 1.89 | 480 | ... | ... | 204 | 203 |

TABLE II

YIELDS OF OSAZONES

| Alcohol | Hydrogen peroxide, Fenton and Jackson g. | Hydrogen peroxide, Present investigation g. | Hydrogen peroxide and boric acid (1 mol), g. | Sodium perborate alone, g. | Boric acid 1 mol. g. | Boric acid 2 mols. g. | Boric acid 3 mols. g. |
|---|---|---|---|---|---|---|---|
| Ethylene glycol | 0.70 | 0.55 | 0.50 | 0.588 | 0.55 | 0.54 | 0.54 |
| Glycerol | 1.55 | 1.00 | 0.85 | 0.960 | 0.81 | 0.78 | 0.76 |
| Erythritol | 1.75 | 1.55 | 1.30 | 1.530 | .. | .. | .. |
| Mannitol | 3.12 | 2.15 | 1.84 | 1.550 | 1.27 | 1.08 | 0.20 |

oxidation product with sodium perborate is a little less than with hydrogen peroxide except with ethylene glycol but there is a distinct advantage in the use of sodium perborate which can be added conveniently in any controlled quantities to a reaction mixture. This investigation has also shown that the presence of boric acid has a retarding effect on the oxidation of a polyhydric alcohol both with sodium perborate as well as with hydrogen peroxide.

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## A Correction: Absorption Spectra of Azlactones[1]

BY F. W. SCHUELER AND CALVIN HANNA

RECEIVED JULY 7, 1952

Recently we have had our attention called to errors in some of the absorption maxima values we reported for certain azlactones.[2]

The corrected values for the azlactones reported in the above reference are listed in Table I. As will be seen upon comparison of these values with the values reported in the above-mentioned reference, the average errors for the first maxima and second maxima were 35 and 74 m$\mu$, respectively. Such errors are clearly of such a constancy that they suggested a systematic error in the standardization of the instrument during the period through which these materials were studied.

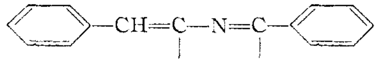
It has been the practice in many laboratories to check the standardization of the Beckman spectrophotometer only twice or three times a year. Following our experience with this instrument, however, we feel that the instrument should be checked before each use with a compound of known spectra before the determination of the spectra of compounds never before evaluated in these regards.

TABLE I

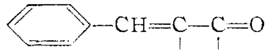
ABSORPTION SPECTRA OF AZLACTONES

| No. | Max. 1 m$\mu$ | Max. 2 m$\mu$ | No. | Max. 1 m$\mu$ | Max. 2 m$\mu$ |
|---|---|---|---|---|---|
| 1 | 259 | 377 | 15 | 265 | 386 |
| 2 | 268 | 387 | 16 | 244 | 365 |
| 3 | 271 | 376 | 17 | 257 | 370 |
| 4 | 261 | 365 | 18 | 232 | 328 |
| 5 | 259 | 360 | 19 | 264 | 369 |
| 6 | 259 | 376 | 20 | 265 | 401 |
| 7 | 264 | 393 | 21 | 264 | 396 |
| 8 | 257 | 373 | 22 | 264 | 394 |
| 9 | 260 | 362 | 23 | 259 | 383 |
| 10 | ... | 359 | 24 | 260 | 361 |
| 11 | ... | 360 | 25 | 225 | 286 |
| 12 | ... | 290 | 26 | 245 | 482 |
| 13 | 259 | 372 | 27 | 240 | 475 |
| 14 | 247 | 366 | 28 | 240 | 425 |

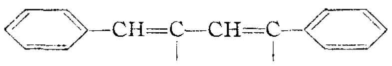
As a result of this correction it will be seen that the conjugated system

2 

better accounts for the spectra of the azlactones than the system

1 

originally indicated.[2] Moreover, a comparison of these corrected results on the azlactones, together with results obtained using the analogous crotonolactones,[3] indicates that chromophoric system operates in both. Thus, in the case of the crotonolactones, the conjugated system



is analogous to the system (2) indicated above for the azlactones.

[1] This work was aided by a grant from the U. S. Public Health Service.

[2] F. W. Schueler and S. C. Wang, THIS JOURNAL, **72**, 2220 (1950).

[3] F. W. Schueler and Calvin Hanna, *ibid.*, **73**, 3528 (1951).

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## Indophenols of 8-Quinolinols

BY J. P. PHILLIPS, J. F. EMERY AND QUINTUS FERNANDO

RECEIVED JUNE 30, 1952

The indophenol formed by 8-quinolinol when treated with hydroxylamine in an alkaline oxidizing