TABLE III

VALUES OF K IN 10 AND 20 PER CENT. METHYL AND ETHYL ALCOHOL SOLUTIONS

Methyl Alcohol Solutions						
°C.....	0	10	20	25	30	40
10%	0.8812	0.8853	0.9173	0.9471	0.9093	0.8379
20%	.6026	.6082	.5860	.5776	.5528	.5254
Ethyl Alcohol Solutions						
10%	0.8625	0.8700	0.9000	0.9004	0.9061	0.9020
20%	.6730	.7546	.7706	.7811	.7880	.7803

The curvature of the lines in the plots relating $(-\log K')$ to ionic strength was more pronounced in this investigation than in investigations using acids of smaller molecular size and media of higher dielectric strength. In solutions of lower dielectric strength (as the 20% ethyl alcohol solutions) the curvature was sufficiently great to make accurate extrapolation difficult. This effect was greatest at higher temperatures.

Summary

1. Electromotive force measurements have been made on cells of the type H_2(1 atm.), (HPr(m_1), NaPr(m_2), NaCl(m_3)) in x alcohol–water, AgCl(s) + Ag(s), where x is the per cent., either 10 or 20, of methyl or ethyl alcohol.

2. Values of the ionization constants of the propionic acid in 10 and 20% alcohol–water solutions have been determined over the temperature range 0 through 40°.

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NOTES

Synthesis of 4,4′-Dicyanostilbene

BY SHOU-CHENG FU[1] AND PETER P. T. SAH[2]

4,4′-Dicyanostilbene, a valuable intermediate which has been used in the synthesis of the pharmacologically[3] interesting 4,4′-diamidinostilbene, has been prepared from *p*-cyanobenzaldehyde through the pyrolysis of the corresponding azine.

4,4′-Dicyanobenzaldazine.—*p*-Cyanobenzaldehyde[4] (4 g.) and hydrazine hydrate (40%, 1.5 g.) in 30 cc. of absolute ethanol were heated four hours under reflux. The reaction mixture was concentrated to *ca.* 5 cc.; the pale yellow needles which separated on cooling were collected and recrystallized twice from dilute ethanol, yellow needles (2.5 g.); m. p. 118–120° (uncor.).

Anal. Calcd. for $C_{16}H_{10}N_4$: N, 21.70. Found: N, 21.60.

4,4′-Dicyanostilbene.—4,4′-Dicyanobenzaldazine (2 g.), on heating first melted, then decomposed, then sublimed as beautiful long needles and narrow plates. Repeated sublimation gave 500 mg. of practically colorless 4,4′-dicyanostilbene, m. p. 278–280° (cor.), mixed with a sample prepared by the method of Lamb and White,[5] but purified by sublimation; m. p. 278–280° (cor.).

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(3) Yorke, *Transactions of the Royal Society of Tropical Medicine and Hygiene*, **33**, 464 (1940).

(4) Moses, *Ber.*, **33**, 2624 (1900).

(5) Lamb and White, *J. Chem. Soc.*, 1253 (1939).

Rotational Relationships of Alkyl Glucosides

BY LEONARD C. KREIDER AND ELMER FRIESEN[1]

The problem of finding simple relationships between the structures of glycosides and glycoside acetates and their optical rotations first attracted our attention when we noticed that the earlier theories proposed by Hudson[2] and Maltby,[3] stating that molecular rotations of glucosides increased in magnitude with increasing molecular weight, were inconsistent with the data more recently obtained on the higher homologs of the alkyl glucosides. In the effort to develop a consistent theory that suggested itself to us,[4] we have prepared a number of new glucoside acetates, following the method of Kreider and Evans,[5] and from these we have prepared the glucosides, following the method of Isbell,[6] and have measured the rotations and other properties of these substances. The resulting data are contained in Table I.

In addition, we have measured the rotations in chloroform of the following substances kindly supplied to us by Noller and Rockwell[7] for this

(1) Present address: Redman Scientific Company, Los Angeles, California.

(2) C. S. Hudson, THIS JOURNAL, **31**, 66 (1909).

(3) J. C. Maltby, *J. Chem. Soc.*, **123**, 1404 (1923).

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