TABLE II

SUMMARY OF CALCULATED VALUES USING EQUATION (6) AND OF EXPERIMENTAL DATA

	$K_M \times 10^6$ HAc		$K_M \times 10^5$ HB		$K_M \times 10^{11}$ H_2Q		$K_M \times 10^4$ ClHAc	
F_D	Exptl.[8]	Calcd.	Exptl.[7]	Calcd.	Exptl.[7]	Calcd.	Exptl.[8]	Calcd.
0.0	1.84	(1.84)	6.09	(6.09)	2.66	(2.66)	1.73	(1.73)
9.61					2.35			
25.18					1.94			
26.40		1.36		4.60		1.81		1.37
28.4	1.352							
48.4	1.088							
51.45			3.56					
52.42			3.55					
54.69					1.30			
55.60		0.988		3.41		1.23		1.05
77.1	0.741							
77.49					0.889			
78.49		.756		2.61		0.895		0.827
87.99			2.23					
92.51		.622		2.18		.722		.700
93.0	.608							
96.00					(.684)			
96.51			2.03					
97.0	.575							
97.87			1.99					
98.67					.657			
100	(.555)	(.555)	(1.95)	(1.95)	(.639)	(.639)	(0.631)	(.631)

The K_M values, calculated from the revised equation (6), are now in very good agreement with the experimental results. These are summarized in Table II and plotted in Figs. 1, 2, and 3. The predicted slope for chloroacetic acid is given in Fig. 4; no experimental data for comparison are available. The value of K_D for salicylic acid is extrapolated with equation (6) from the average value $K_M = 0.24 \times 10^{-3}$, a. d. 12%, at $F_D = 91.7$, and from the average $K_H = 0.98 \times 10^{-3}$, a. d. 2%, determined by Korman and La Mer.[1] The K_D thus calculated is 0.21×10^{-3} which also has not yet been determined experimentally.

It is apparent that true values of hydrogen and deuterium ion concentrations are obtainable from kinetic data when tested by means of acid dissociation constants.

(6) (Acetic acid) Chittum and La Mer, THIS JOURNAL, **59**, 2524 (1937).

(7) (Benzoic acid and hydroquinone) Rule and La Mer, *ibid.*, **60**, 1974 (1938).

(8) (Chloroacetic acid) Lewis and Schultz, *ibid.*, **56**, 1913 (1934).

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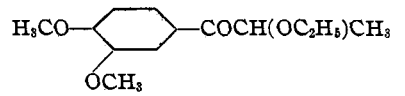
The Structure of Lignin

BY A. B. CRAMER, M. J. HUNTER AND HAROLD HIBBERT

In a recent note[1] the isolation of a new aromatic ketone ($C_{13}H_{18}O_4$) was described. This has now been identified (by direct synthesis and mixed melting point determination) as α-ethoxypropioveratrone



The synthesis (after numerous unsuccessful attempts, and using a variety of methods) was accomplished as follows:

Veratrole + propionyl chloride ⟶ Propioveratrone ⟶ α-Brompropioveratrone ⟶ Acetate of α-hydroxypropioveratrone

α-Hydroxypropioveratrone ⟶ α-Ethoxypropioveratrone

The synthetic compound melted at 81–82°; a mixed melting point with natural compound gave no depression. The melting point of the 2,4-dinitrophenylhydrazone of the natural compound is 134–136°; synthetic compound, 134–136°; the mixed melting point also showed no depression.

(1) Cramer, Hunter and Hibbert, THIS JOURNAL, **60**, 2274 (1938).

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The Classification of Chelating Groups

BY HELMUT M. HAENDLER AND BRADFORD P. GEYER

In the course of preliminary work on organic analytical reagents which form inner complex