

been accumulating. The detailed account will appear elsewhere.

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January 25, 1934.

Density of Propionic Acid Solutions in Water.

IN an experiment for the observation of the Faraday rotation of fatty acid solutions in water the density of the solution of propionic acid for different concentrations was determined as no detailed result for this is given in the *I.C.T.*¹ Some previous works, however, are referred to in those tables, but as far as the old literature could be consulted no systematic and exhaustive work seems to have been done in this direction. Thus Wilsdon and Sidgwick² give experimental values for only three low concentrations (from 1.945 to 10.28% of acid by volume) together with three other interpolated values for about the same range. Drucker³ has also given results for eight different concentrations low and high, of which only two are for concentrations beyond 50%. Thus, it was necessary to make some fresh and systematic determinations.

All measurements were made at 25°C. and the variation of temperature was about ± 0.02 . A specific gravity bottle of 50 c.c. capacity was employed for density determination. The results are given in the table below (Table I) and also plotted in the graph. It is found that the density of the solution goes on increasing with the addition of the acid, but after reaching a maximum for about 51.2% of the acid (by volume), it decreases gradually. It is to be noted that the maximum density occurs at about a concentration when the acid and the water are mixed in equal quantities by weight. The phenomenon is also supported by the fact that in observing the Faraday rotation, the intensity of the light passing through the solution considerably diminishes at this concentration in comparison with concentrations higher and lower.

In the graph dots give the results of the present experiment and the small circles the Drucker's values. Of the latter, the value

of the density for 74.01% of the acid (by volume) is rather high.

The Faraday rotation of the solution, however, does not show any maximum but goes on increasing with increase in the percentage of water, although it does not conform to the Schonrock-verdet mixture rule.

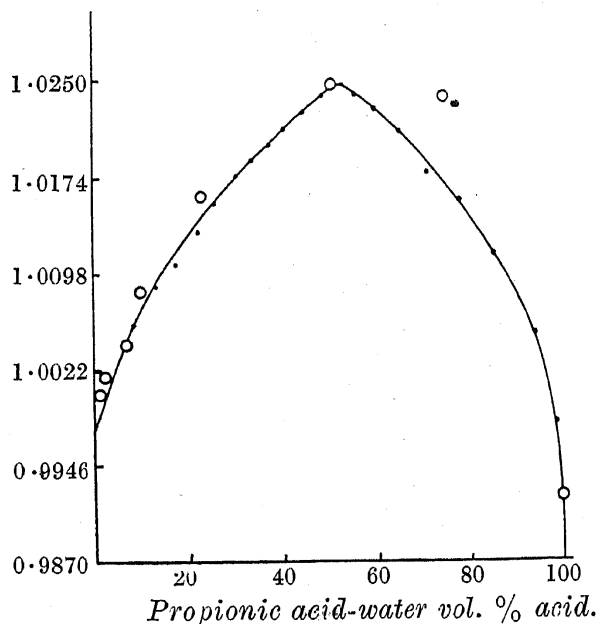


TABLE I.

Concentration % by volume	d_4^{25}	Concentration % by volume	d_4^{25}
7.098	1.0060	48.08	1.0244
11.36	1.00862	52.91	1.0250
15.91	1.01094	58.21	1.02370
20.69	1.01354	64.04	1.0222
24.84	1.01584	70.47	1.0186
29.85	1.01784	76.95	1.01624
32.84	1.01921	83.97	1.01204
36.11	1.02046	92.39	1.0058
39.73	1.02190	98.01	0.9882
43.70	1.02310		

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Calcutta,
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The Number of Microsporangia in each Stamen in *Asclepiadaceæ*.

THE available literature on the family, *Asclepiadaceæ*, discloses the fact that this family is characterised by the presence of only two microsporangia in each stamen. Frye,¹ however, expresses his doubt on this fact and appears to hint at the possibility of the existence of four microsporangia

¹ *I.C.T.*, 3.

² Wilsdon and Sidgwick, *J. Chem. Soc.*, 103, 1959.

³ Drucker, *Zeits. f. Phys. Chemie*, 52, 641.