has recently attracted considerable attention because of the fact that it is obtained in rather large quantity as a by-product in the spruce pulp industry. Thymol, which is of considerable commercial importance and which bears the same relation to *p*-cymene as does phenol to benzene, can not be obtained from *p*-cymene by the ordinary methods of getting a phenol from its corresponding hydrocarbon. However, by using the following rather indirect method the synthesis of thymol was accomplished: *p*-cymene was nitrated and the compound with the nitro group in the position ortho to the methyl group was obtained. This compound was reduced to the corresponding amino *p*-cymene or cymidine, which when sulphonated gave cymidine sulphonic acid, the sulphonic group entering the position ortho to the isopropyl group. The amino group of cymidine sulphonic acid was then removed through diazotization and subsequent reduction with alcohol and copper powder. The cymene sulphonic acid thus obtained was converted into its sodium salt and the latter when fused with sodium hydroxide was converted into thymol.

The vapor pressure of phthalic anhydride: K. P. Monroe.

The preparation of furfural: K. P. Monroe. Corn-cob adhesive prepared according to the method of La Forge and Hudson (*J. Ind. Eng. Chem.*, 10 (1918, 925) by extracting corn-cobs with water under pressure at 150° C. is an excellent source for furfural, since the gums so obtained are rich in pentosan and yield 26 per cent. of pure furfural. The essential improvements over the previously published methods of obtaining furfural from pentosan containing material are (1) removal of furfural from the reaction mixture by a rapid current of steam during the hydrolysis by 25 per cent. H_2SO_4; (2) separation of furfural from the dilute aqueous solution which constitutes the distillate by distillation with the acid of a fractionating column. Uses for furfural in the industries and arts are outlined; among these are the preparation of: hard resins similar to the well-known "Bakelite," soluble resins which may find application in the varnish trade, a series of dyes which may be obtained by condensation with various coal-tar products.

The vapor pressure of phthalic anhydride: K. P. Monroe. The vapor pressure of phthalic anhydride was determined by the static isoteniscope method of Smith and Menzies (*J. Am. Chem. Soc.*, 32 (1910), 1412–59). The following equation, of the type obtained by integration of the Clausius-Clapeyron equation with simplifying assumptions, was found to express the results:

$$\log_{10} p = 7.94234 - \frac{2823.5}{T} \quad (1)$$

where p = vapor pressure in millimeters of mercury and T = absolute temperature. The molar latent heat of vaporization was calculated to be 12,910 colories, while the value 13.6 was obtained for the entropy of vaporization divided by R (the gas constant) at the temperature (near 218°) at which the concentration of vapor is 0.00507 mole per liter. According to the criterion of Hildebrand (*J. Am. Chem. Soc.*, 37 (1915), 970), this indicates phthalic anhydride to be a *normal* liquid.

The present independence of American synthetic dyes and how it was accomplished: Robert E. Hussey. Prior to the war all of the biological dyestuffs used in the bacteriological laboratories and in the laboratories of public health came from Germany. The two chief difficulties upon the cessation of imports that confronted the American manufacturer were lack of raw supplies and lack of accurate information as to their manufacture. All of these dyes must be absolutely uniform and standardized as certain arbitrary amounts are used in certain dilution to attain specific results. The army had to be supplied. Quantity production took place and, after much experimentation, this experience has now made it possible to supply scientific dyes equal and in some cases, superior to those formerly imported. Investigators should mention that American dyes were used to obtain their result for by this method proper encouragement to this industry would be given.

Charles L. Parsons,
Secretary

(*To be continued*)

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