CHAPTER VI

SUMMARY
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Intrinsic viscosities of some n-alkanes (n-dodecane, n-tetradecane, n-hexadecane, n-eicosane and n-hexatriacontane), some n-acids (n-butyric acid, n-caproic acid, n-caprylic acid, n-lauric acid, n-myristic acid, n-palmitic acid and n-stearic acid), and some n-alcohols (n-heptyl alcohol, n-octyl alcohol, n-decyl alcohol, n-dodecyl alcohol, n-tetradecyl alcohol and n-cetyl alcohol); and diffusion coefficient of n-butyric acid, n-caproic acid, n-caprylic acid and n-lauric acid, all in benzene have been determined at 30°C. The results of intrinsic viscosities and diffusion coefficients have been compared with the values calculated from the improved Kirkwood-Riseman theory (Perico-Rossi theory) and Debye-Bueche theory. Both the theories with a suitable choice of Stokes radius predict results in remarkable agreement with the experimental results for short-chain molecules. The behaviour of these molecules in solvents, benzene and carbon tetrachloride has been explained satisfactorily with the $g^E$ values determined for these systems in these laboratories.

Excess volumes of mixing have been determined for
binary mixtures of n-hexane, n-heptane, n-undecane, 
n-tetradecane, n-propionic acid, n-butyric acid, n-caproic acid, n-heptylic acid, n-caprylic acid, n-butyl alcohol, n-amyl alcohol, n-heptyl alcohol and n-octyl alcohol in 
benzene at 30° and 36°C. The results have been discussed 
in the light of APM theory and Flory theory where the information required for these theories is available. The agreement with APM theory is rather poor whereas the values calculated by Flory's theory show fair agreement with the experimental results.