terfacial liquid crystal formation, and diffusion, that control the overall kinetic behavior of systems containing surfactant aggregates.

II. EXPERIMENTAL BACKGROUND

A. Passive Drop-on-Fiber

One of the problems of quantitatively examining systems, such as emulsions, to obtain the kinetic and contained mechanistic information has been that of simultaneously defining the volume and interfacial area of the system as a function of time. Studies of formulation stability to determine the factors involved in their time evolution are usually somewhat qualitative and system-specific. An attempt to overcome some of the inherent difficulties in such measurements has been the development of the passive drop-on-fiber (3,5) technique. This defines the system by fixing in space one droplet of emulsion size using an inert cylindrical fiber. Provided the distortions from gravity are negligible, the shape of the axis-symmetric drop is purely determined by capillary forces. An analysis of this type of system (3) shows that the rate of solubilization into solution is related in a simple fashion to the relative dimensions of the droplet and fiber. Both the volume (V) of the drop and the interfacial area (A) can be obtained and used to calculate the rate from the general relationship:

$$\text{Rate} = \frac{1}{A}\frac{dV}{dt} \qquad [1]$$

The way in which the experiment has been performed has mainly been concerned with systems in which the amount of oil in the drop is extremely small compared with the amount required to saturate the micelles. In this respect, the data obtained are concerned mainly with the *initial* kinetic process so that contributions from micelles containing oil can be neglected.

B. Rotating Disk

Cases in which the solubilizate under investigation is in the form of a solid that can be fashioned into a shape allows the use of methods in which the material is suspended in the solubilizing medium. Dissolution of the solubilizate is then followed analytically as a function of time, with the particular technique being dependent upon the nature of the system. Radioisotopes, for example, have been used (1,2) with fatty acid solubilizates. An advantage of this technique is that it potentially allows the effects of rheology on the kinetics to be determined by spinning the solubilizate at different rates.