The theory of membrane equilibrium may be applied to the process of dialysis, because the rate of removal of a diffusible impurity S_n from a colloidal solution L′, enclosed in a membrane surrounded by pure water is partly determined by the distribution ratio $r_n = [S_n]_e′ / [S_n]_c″$

$$- \frac{d}{dt} [S_n]_c′ = [S_n]_c′ \left(\frac{1}{r_n} \right) k_n \qquad .. \quad (33)$$

where t = time, k_n is a coefficient, directly proportional to the area of the membrane, and inversely proportional to the volume of the solution L′ and the thickness of the membrane. k_n is an undetermined function of the shape of the membrane, the rate of stirring and other factors. On the assumption that k_n is a constant, the reciprocal of the distribution ratio, is a measure of the rate of dialysis. Adair's[23] work shows that the effect of salts on the rate of removal of impurities is of importance in studies on systems where the composition of the dialysate is *constant*.

Before we proceed to describe the applications of this theory of membrane equilibrium, it may be pointed out that the presence of a membrane is not absolutely necessary for the existence of the Donnan equilibrium. The theory is applicable to any system which contains some kind of ions, which are not allowed to diffuse to some part of the system. The diffusion of the ions may be hindered either by the formation of aggregates round the ion, or by the absorption of the ion on the surface of the membrane, or some other peculiar property of the ion. For all practical purposes we can assume that the theory of Donnan is applicable even when the ion is able to diffuse, but the rate of diffusion is very small.

OBITUARY.

Sir Nowroji Saklatvala, C.I.E., Kt., K.B.E.

INDIA, the Parsee community and particularly, the House of Tata, incurred last July a grave loss in the death of Sir Nowroji Saklatvala, less than one month after the untimely death of Mr. J. A. D. Naoroji.

Born on September 10, 1875, a nephew of the famous industrialist Mr. J. N. Tata, Nowroji Bapuji Saklatvala was naturally destined for association with Messrs. Tata Sons, Ltd., and this began in 1889 as a cotton-mill apprentice. Rapid promotion was earned by whole-hearted application to work, linked with aptitude, these qualities being recognised outside the firm by his appointment in 1916 to Chairmanship of the Bombay Millowners' Association, which he represented in the Legislative Assembly six years later. Increasing knowledge of the varied interests embraced by the firm, fortified by devoted loyalty thereto, made it appropriate that he should become Chairman at the death of Sir Dorabji Tata in 1932, in which year he was appointed also Chairman of the Tata Iron and Steel Co., Ltd. Thence forward he maintained a detailed interest in the vast Jamshedpur corporation, meriting the gratitude of the employees by addressing himself to an improvement of their conditions and pay through a profit-sharing scheme.

In spite of these heavy responsibilities, Sir Nowroji found time to associate himself with other commercial enterprises including insurance and banking, whilst identifying himself with a recently successful fusion of the various conflicting cement interests. As Chairman of the Sir Dorabji Tata Trust, he guided the disposal of princely charitable funds with vision and wisdom, lately approving the construction of a Cancer Institute. The human side of his character was illustrated by his early work for the Cricket Club of India, and by his uniform encouragement of all social clubs attached to the numerous industrial corporations with which he was connected.

Testimony of employees and business associates alike shows that Sir Nowroji commanded their respect and affection by his integrity and sympathy. Government recognition of his valuable services to Indian industry came with C.I.E. (1923), a Knighthood (1933), and the K.B.E. (1937). Although nominally on holiday at the time of his death he was actually engaged in a business visit to the United States, England and Scandinavia, and was resting at Aix-les-Bains when he died suddenly on July 21, within a few weeks of completing his sixty-third year.