XLIX. AN EXTREME CASE OF ELECTROLYTIC CONDUCTION.

J. Rud Nielsen, Physics Department, University of Oklahoma.

(Abstract)

When an electric current has passed for a long time through an electrolytic cell, say, Ag/O.OlnAgNO$_3$/Ag, and stirring of the electrolyte has been avoided, a state of equilibrium must be reached in which the current is carried by the silver ions alone. The concentration of the nitrate ions at any point will not vary with time. It will vary from point to point in such a way that the migration of nitrate ions due to the electric field is just balanced by diffusion.

A method is given for the calculation of the concentration distribution for anion and kation. The paper which is mathematical throughout will be published elsewhere.