ABSTRACT

The diazepines, diazepam, nitrazepam, chlordiazepoxide and a number of substituted 2,3-naptho-, 2,3-benzo- and 2,3-dihydro - 1,4-diazepines were studied by single sweep cyclic voltammetry at a dropping mercury electrode. The reduction peaks observed for these compounds in N,N-dimethyl formamide (D.M.F.), aqueous- D.M.F. solutions and in aqueous acidic and alkaline solutions were analysed from the observed experimental parameters of peak reduction potential (E_p), the peak current (i_p) and the half-peak potential ($E_{p\frac{1}{2}}$). The variation of these parameters with sweep speed was also observed and the current function values so obtained indicated the nature of the reduction processes.

Potentiostatic reductions were carried out on selected compounds in an attempt to identify the reduction products. The reaction orders for the potentiostatic reductions were obtained by observing the change in the Tafel plot current maximum with concentration.