

41.
Hittorf and
Kohlrausch.

attacked by chemists, became gradually better understood and gained ground. The merit of having finally introduced into our modern notions the idea of the free mobility of the constituents of electrolytic compounds belongs to W. Hittorf and F. Kohlrausch. The name of the latter will be connected in the history of science with the phenomenon of the "migration of the ions," which he has expressed, after ten years of research (1869-79), in his well-known law. The question was put and answered, "What becomes of the energy of the electric current?" It was found that electrolytic conduction increased with dilution and temperature—two agents which would favour dissociation. The phenomena of dissociation had, moreover, been studied independently of the galvanic current. Following in the track of Graham and Andrews, a number of physicists abroad—notably van der Waals, Raoult, and Van't Hoff—had confirmed and extended the view that bodies in solution resembled gases, that the osmotic pressure of a liquid resembled ordinary gas pressure, that the law of Avogadro regarding the number of molecules in a gas could be transferred to matter in a state of solution, and that the magnitude of the osmotic pressure in a liquid could be used as a measure of the number of dissociated—wandering—molecules which are contained in a given volume of a solution, just as the pressure of a gas would increase if the number of molecules in a given space were increased through the splitting up of compounds. Apparent anomalies in the behaviour of gases approaching condensation were explained by the aggregation, and similar ones in dilute solutions by the dissociation, of molecules.