Sec. 2.3  Example of a Complex Reaction Mechanism: The Hydrogen + Halogen Reaction

**FIGURE 2-2** Plot of the composition of hydrogen-iodine mixtures with time. The left ordinate is the fraction of material present as HI; the right ordinate is the dissociated fraction, i.e., \( \text{H}_2 + \text{I}_2 \). The upper plot follows the dissociation of pure HI; the lower, the reaction of \( \text{H}_2 \) and \( \text{I}_2 \). The solid curves are the theoretical expression, equation (2-167). Both reactions reach a common equilibrium. The measurements shown were taken at a temperature of 448°C, maintained by a boiling sulfur bath [from M. Bodenstein, Z. physik. Chem. 13, 56 (1894)].