Region I in Figure 6-19 is also of interest, since it shows the existence of a minimum threshold ΔK_{th} below which no crack growth will occur. This "*threshold stress intensity factor ΔK_{th} has often been considered analogous to the unnotched fatigue limit S_e, since an applied stress intensity factor range ΔK below ΔK_{th} does not cause fatigue crack growth.*"[15]

These axial fatigue tests have a mean stress component present, and the level of mean stress has an effect on the rate of crack propagation. Figure 6-20 shows a schematic set of *da/dN* curves for different levels of mean stress as defined by the stress ratio

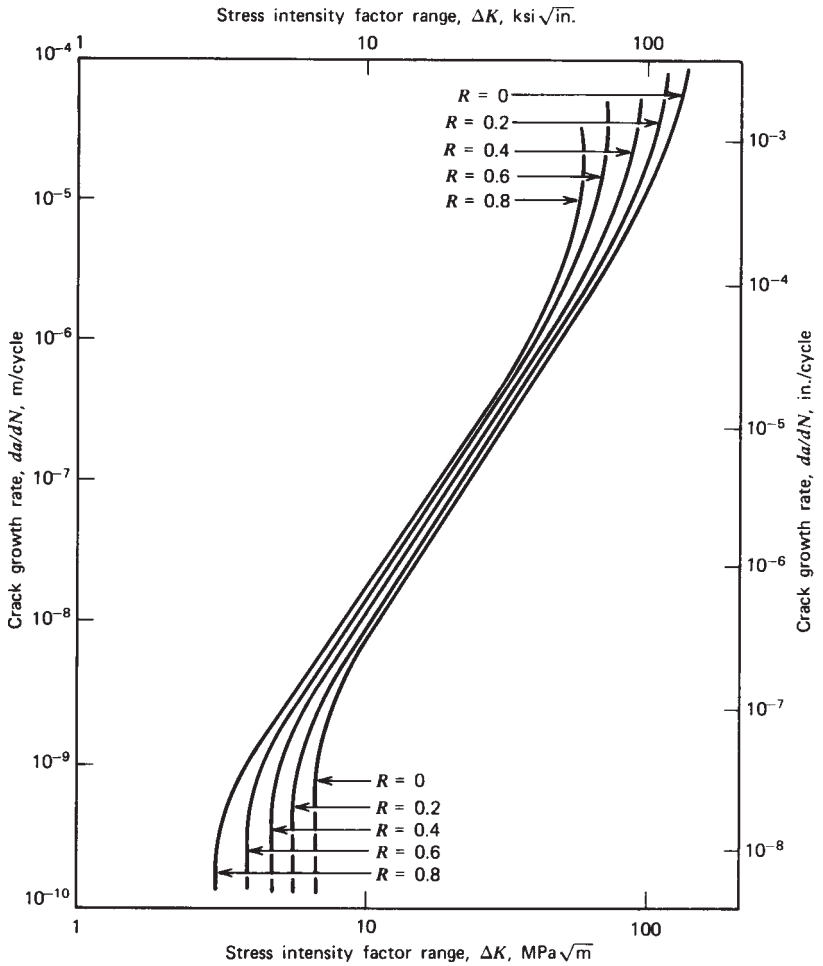

FIGURE 6-20

Schematic of the Effects of Mean Stress on the Crack-Growth-Rate Curve (From Fuchs and Stephens, *Metal Fatigue in Engineering*, New York, 1980, reprinted by permission of John Wiley & Sons, Inc.)