



**FIGURE 14.8** Pulsating stars on the H-R diagram. (Data for the evolutionary tracks from Schaller, et al., *Astron. Astrophys. Suppl.*, 96, 269, 1992.)

about four times less luminous than classical Cepheids with the same period. Their period-luminosity relation is thus lower than and parallel to the one shown for the classical Cepheids in Fig. 14.5. RR Lyrae stars, also Population II, are horizontal-branch stars found in globular clusters. Because all RR Lyrae stars have nearly the same luminosity, they are also useful yardsticks for distance measurements. The  $\delta$  Scuti variables are evolved F stars found near the main sequence of the H-R diagram. They exhibit both radial and nonradial oscillations; the latter is a more complicated motion that will be discussed in Section 14.4. Below the main sequence (not shown in Fig. 14.8; however, see Fig. 16.4) are the pulsating white dwarfs, called ZZ Ceti stars.

All of the types of stars listed thus far lie within the instability strip, and they share a common mechanism that drives the oscillations. The long-period variables such as Mira