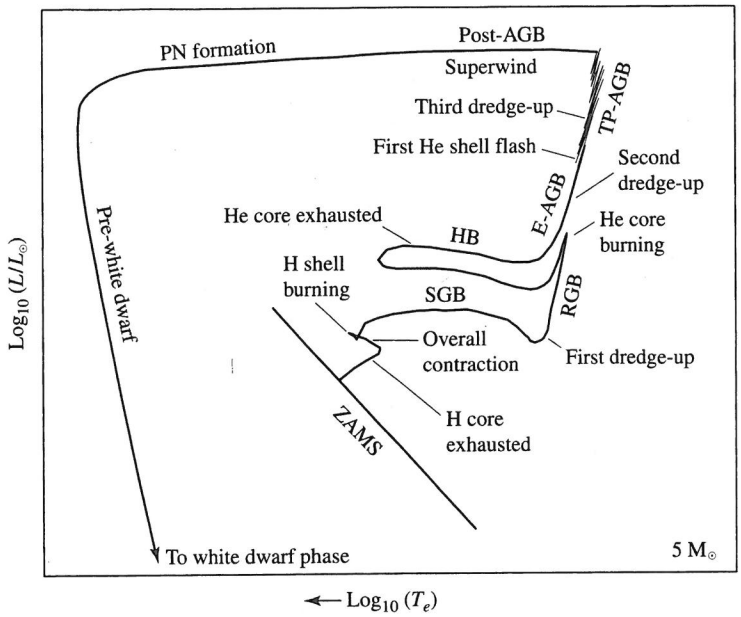

FIGURE 13.5 A schematic diagram of the evolution of an intermediate-mass star of 5 $M_\odot$ from the zero-age main sequence to the formation of a white dwarf star (see Section 16.1). The diagram is labeled according to Fig. 13.4 with the addition of the Horizontal Branch (HB).

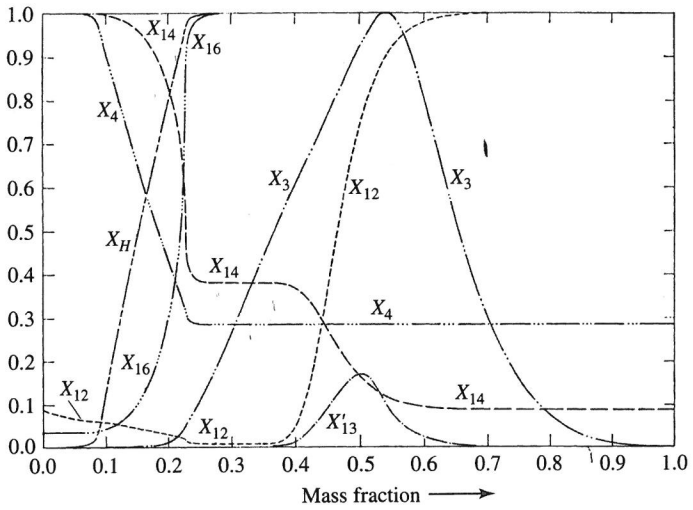

FIGURE 13.6 The chemical composition as a function of interior mass fraction for a 5 $M_\odot$ star during the phase of overall contraction, following the main-sequence phase of core hydrogen burning. The maximum mass fractions of the indicated species are $X_H = 0.708$, $X_3 = 1.296 \times 10^{-4}$ ($^3_2$He), $X_4 = 0.9762$ ($^4_2$He), $X_{12} = 3.61 \times 10^{-3}$ ($^{12}_6$C), $X'_{13} = 3.61 \times 10^{-3}$ ($^{13}_6$C), $X_{14} = 0.0145$ ($^{14}_7$N), and $X_{16} = 0.01080$ ($^{16}_8$O). (Figure adapted from Iben, *Ap. J.*, *143*, 483, 1966.)