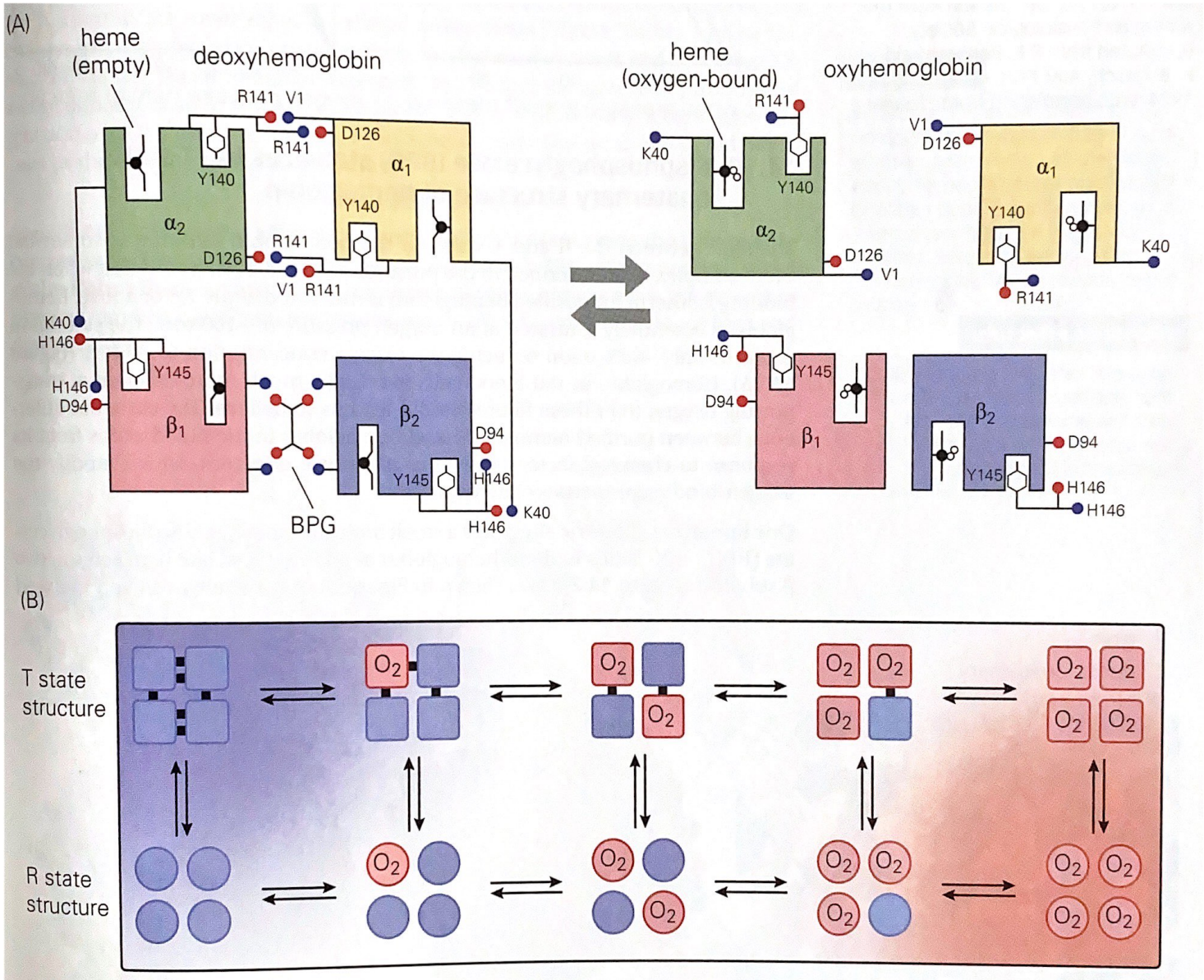

Figure 14.25 The Monod–Wyman–Changeux–Perutz (MWC–Perutz) model for hemoglobin allostery. This model assumes that the hemoglobin tetramer is in equilibrium between two quaternary states, T and R. Ligand binding shifts the equilibrium from T to R. (A) Schematic diagram showing changes in ion-pairing and other interactions between the T (deoxy) and R (oxy) states of hemoglobin. Positively and negatively charged groups are indicated by *blue* and *red* dots, respectively. The T and R states are both compact, but these diagrams have been distorted for clarity. The T and R states are shown here as empty and bound to oxygen, respectively, but you should think of these as alternate structures that the tetramer can adopt, whether or not oxygen is bound. (B) Schematic illustration of the MWC–Perutz model. Ion pairs are indicated by lines connecting the subunits (A, from M.F. Perutz, A.J. Wilkinson, M. Paoli, and G.G. Dodson, *Annu. Rev. Biophys. Biomol. Struct.* 27: 1–34, 1998. With permission from Annual Reviews; B, adapted from W.A. Eaton et al., and A. Mozzarelli, *Nat. Struct. Biol.* 6: 351–358, 1999. With permission from Macmillan Publishers Ltd.)