Cs$_3$P$_{11} \cdot 3$ NH$_3$ was obtained from a solution of Cs$_3$P$_{11}$ in liquid ammonia. Its structure consists of P$_{11}^{3-}$-cage anions, which coordinate the cesium cations together with ammonia molecules, resulting in a three-dimensional network. The compound completes a family of structures that are derived from the binary phosphide Cs$_3$P$_{11}$ through the stepwise expanding and dismantling of the three-dimensional network of ions by ammonia molecules of coordination or through the exchange of the cesium cations for voluminous molecular cations.