A connected matching $M$ in a graph $G$ is a collection of pairwise disjoint edges such that every pair of edges of $M$ is joined by an edge of $G$. Motivated by applications to Hadwiger’s conjecture, Plummer, Stiebitz, and Toft introduced connected matchings and proved that, given a positive integer $k$, determining whether a graph has a connected matching of size at least $k$ is NP-complete. Cameron proved that this problem remains NP-complete on bipartite graphs, but can be solved in polynomial-time on chordal graphs. We present a polynomial-time algorithm that finds a maximum connected matching in a chordal bipartite graph. We give several applications of the algorithm, including computing the Hadwiger number of a chordal bipartite graph. (Received September 16, 2014)