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Matthew D Welz* (mwelz@fortlewis.edu), 1000 Rim Drive, Durango, CO 81301, and **Samuel Fulton** (sjfulton@fortlewis.edu), 1000 Rim Drive, Durango, CO 81301. *An Index-Preserving Bijection Between Marked Tableaux and $P_{n,2}$ -Tableaux.*

In his work with marked tableaux, Stembridge shows that the number of admissible marked tableaux of shape $\lambda \vdash n$ and index i is equal to the multiplicity of the irreducible Specht module S^λ in a certain representation of S_n . Through their seemingly unrelated work with chromatic quasisymmetric functions, Shareshian and Wachs establish that this multiplicity is also equal to the number of $P_{n,2}$ -tableaux of shape λ and index i . This equality established by Shareshian and Wachs is indirect and relies on q -Eulerian polynomials, chromatic quasisymmetric functions, and Smirnov words. Therefore, they ask for a direct, index-preserving combinatorial bijection between marked tableaux and $P_{n,2}$ -tableaux. We present such a bijection. In particular, we develop an index-preserving bijection from the set of all marked tableaux of shape λ to the set of all $P_{n,2}$ -tableaux of shape λ . (Received September 16, 2019)