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Vasu Vineet Tewari* (vasut@math.washington.edu). *Ascents and descents in binary trees, hyperplane arrangements and rook placements.*

Gessel introduced a family of multivariate polynomials to study the distribution of ascent-descent statistics on labeled binary trees. He further observed that evaluations of these polynomials at special values coincided with the number of regions in certain well-known deformations of Coxeter arrangements, and asked for a satisfying explanation for this phenomenon. We study these polynomials from a rook-theoretic perspective, with a special emphasis on connections between non-attacking rook placements on skew Ferrers boards and regions of extended Linial arrangements. (Received August 20, 2016)