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B Lynn Bodner* (bodner@monmouth.edu), Mathematics Department, Monmouth University, West Long Branch, NJ 07764. *Which 17 Planar Crystallographic Groups Are Represented at the Alhambra?*

In her 1944 Ph.D. thesis, E. Mller examined the patterns and tilings in the Alhambra and reported that 11 of the 17 planar crystallographic groups were found there. In a 1986 paper, B. Grnbaum and Z. Grnbaum of the University of Washington (in the USA) & G. C. Shephard of the University of East Anglia (in the UK) reported to have found 13 of the 17 possible patterns there. The four types not found were p2, pg, pgg and p3m1. Subsequently, in 1987, R. Perez-Gomez of the University of Granada & J. M. Montesinos of the University of Madrid reported to have found these missing ones. However, in the June/July 2006 issue of the Notices of the AMS, B. Grnbaum again raised the question What Symmetry Groups are Present in the Alhambra? After a brief introduction to terminology and the classification notation of planar patterns, this paper will attempt to answer Grnbaum's question by addressing his call for the use of "a consistent and well-explained manner, and following explicit criteria." Illustrations of each of the patterns found at the Alhambra in mosaics or plasterwork will be provided. (Received June 26, 2007)