Which Planar Crystallographic Groups May Be Found in Mamluk Geometric Ornamentation?

In the region extending from Arabia to Southern Anatolia, elaborate geometric tilings and patterns still cover the walls and ceilings of extant monuments from the Mamluk period (1250 – 1517). These planar Islamic patterns may be classified as belonging to the various crystallographic ('wallpaper') groups based on the distance-preserving transformations or isometries of the plane (translations, rotations, reflections and glide-reflections) that they possess. Classifying the patterns found as ornamentation on these Mamluk monuments allows us to determine which symmetries were preferred and intuitively recognized as being “right” by the Mamluk culture. This paper will discuss and illustrate examples of the different ‘wallpaper’ groups represented in the Mamluk art of present day Egypt and Syria. (Received September 10, 2013)