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It has been known since 1911, that there exists polyhedra which cannot be triangulated. We will revisit a selection of known polyhedra which are non-triangulatable, and introduce new techniques which lead to more polyhedra which are non-triangulatable. In particular, in 2006, Rambau showed that a non-convex twisted prism over a convex polygon cannot be triangulated. We will introduce the more general dissection of polyhedra of tiling by tetrahedra, and show that the general non-convex twisted prism cannot be tiled by tetrahedra, thus it cannot be triangulated. We will also use a similar technique to show a previously unknown polyhedra, a non-convex twisted dodecahedron, cannot be tiled by tetrahedra. (Received September 20, 2011)