The beauty of curved shapes has intrigued scholars for thousands of years. Beginning with Hippocrates of Chios’ 4th century B. C. quadrature of two lunes of a right triangle, this presentation will examine a variety of ingenious geometric proofs involving curved areas. Then it will touch upon Leonardo DaVinci’s fascination with "lunulae", and lastly will showcase the work of turn-of-the-century architect Louis Sullivan, whose original building ornamentation celebrated the design possibilities of curves in all their glory. (Received August 26, 2009)