1067-P1-77 **David E Molnar***, Felician College Dept. of Mathematics, 223 Montross Ave., Rutherford, NJ 07070-1612. *Connection Games and Sperner's Lemma.*

The game of **Hex** is the most well-known of the great iceberg of *connection games*. Hex's cousin **The Game of Y** is played on a triangular board, with the goal to connect all three sides. A beautiful proof using Sperner's Lemma (known for its association with the Brouwer fixed-point theorem) shows that the game cannot end in a draw. From this the fact that Hex cannot end in a draw follows as a corollary.

In early 2008, Mark Steere published two new connection games, **Atoll** and **Begird**, which generalize Hex and Y, respectively. Atoll has received some attention through online play and a feature in *Games* magazine. Atoll is played on a grid of hexagons surrounded by eight 'islands'; the goal is to connect two opposite islands of one's color. One way to prove that there must be a winner in a game of Atoll, Begird – and in fact infinitely many generalizations – uses a new generalization of Sperner's Lemma. (Received July 16, 2010)