1086-91-169        **Raymond N. Greenwell\*** (`matrng@hofstra.edu`), Department of Mathematics, Hofstra University, Hempstead, NY 11549, and **Tadeusz Krauze** (`tadeusz.k.krauze@hofstra.edu`), Department of Sociology, Hofstra University, Hempstead, NY 11549. *Partially ordered sets and stratification.* Preliminary report.

We employ partially ordered sets to describe the stratification of a social system, using rank to define the strata. We present a simple method of computing the matrix corresponding to the Hasse diagram and prove its correctness. This methodology is applied to analyze the hierarchy of countries that have won at least one Olympic medal. Four different definitions of dominance are given, leading to four different hierarchies and Hasse diagrams. We also prove than any of these definitions preserve any ordering based on giving different weights to gold, silver, and bronze medals. We study dominance between adjacent strata and note how the system changes with time. We present a case analysis for Poland as an illustration of the set of data that can be computed for any country. (Received August 01, 2012)