A recent paper of D. Dummit, Granville, and Kisilevsky showed the existence of unusually large biases in a number of prime-counting problems. While investigating this phenomenon, the following question arose: given $n$ odd primes $p_1, \ldots, p_n$ where $p^*$ denotes $(-1)^{(p-1)/2}p$, how many possible configurations are there for the splitting behavior of $p_i$ in $\mathbb{Q}(\sqrt{p_j^*})$ for the possible pairs $(i,j)$? A natural way to organize this information is via the “quadratic residue matrix” of Legendre symbols $\frac{p_i}{p_j}$, which is a seemingly natural object that does not appear to have been previously studied. In my talk, I will give a simple characterization of these quadratic residue matrices along with natural generalizations to the cubic and quartic cases. (Received September 19, 2016)