1067-05-1695   **E. Rodney Canfield***, Department of Computer Science, University of Georgia, Athens, GA
                      30602. *The Asymptotic Hadamard Conjecture.* Preliminary report.

The Hadamard Conjecture states that for every integer n which is divisable by 4 there is an $n \times n$ matrix over $\{\pm 1\}$ whose rows are pairwise orthogonal. The first value of n in question is 668. Let $H_{n,t}$ equal the number of $n \times t$ matrices over $\{\pm 1\}$ whose rows are pairwise orthogonal. The Asymptotic Hadamard Conjecture states that for $t > n^{1+\epsilon}$

$$H_{n,4t} \sim \frac{2^{4nt+(n-1)^2}}{(8\pi t)^{d/2}}, \qquad d = \binom{n}{2}.$$

Warwick de Launey and David Levin have proven the conjecture for $t > n^{12+\epsilon}$ (2010). We review their work, and report on our efforts to improve upon it. (Received September 21, 2010)