1056-01-548 **Byron E. Wall*** (`bwall@yorku.ca`), 218 Norman Bethune College, York University, 4700 Keele Street, Toronto, Ontario M3J 1P3, Canada. *Pinning Down Outliers: 19th Century Stabs at Exact Probabilities for Rare Events.* Preliminary report.

In the late 19th century, statistics emerged as a discipline from probability theory. Statistics made predictions of future events based upon the past frequency of such events under similar circumstances. When the events were commonplace aspects of human experience, such as average longevity for males in the population, a lot of data supported the predicted likelihood of the unknown, future event. But the less frequent the event in question, the smaller the sample of data on which one could make predictions. In some cases, there were no previous outcomes of the kind contemplated. Yet these too were assigned probabilities. The question is, on what basis was a probability assigned for such events? It would not be surprising to find out that many of the assigned probabilities were not based on data at all, but instead were extrapolations based upon dubious assumptions about the symmetry of vast unknowns in Nature. A more disturbing thought is that such irrational probability assignments may have become the norm and have entered standard statistical practices and are still with us today. This paper explores some of the relevant cases from that period. (Received September 11, 2009)