1003-01-109   **Paul Schuette*** (`schuette@meredith.edu`), 3800 Hillsborough Street, Department of Mathematics and Computer Scienc, Meredith College, Raleigh, NC 27607-5298. *A Short History of the Zipf-Pareto Distribution.*

This talk will consider the origins and development of the Pareto distribution $F(x) = 1 - 1/x^\alpha$, for $x \geq 1$ and $F(x) = 0$ for $x < 1$, its discrete analog, the Zipf distribution and their relationships to rank-size rules. We will begin with Pareto's 1896 work, in which he first observed that the number of individuals whose income exceeded the level x was approximately A/x^a, where A and a are constants. We will continue with other applications, such as Auerbach's 1913 observation that cities follow a rank-size law, and Estoup's observations for word frequencies in linguistics. The contributions of Lotka and Yule, as well the attempt by George Kingsley Zipf to explain the rank-size phenomena in terms of the "principle of least effort" will be discussed. Attempts to explain rank-size phenomena mathematically by Champernowne, Mandelbrot and Simon will be examined, along with subsequent controversies. Finally, Hill's work on the asymptotic limit of order statistics and more recent extensions will be considered. (Received September 22, 2004)