In ancient times mathematicians were fascinated with “special” numbers of all kinds, from primes, to perfects, amicables, abundants, and so on. For centuries, only the barest of attempts were made to systematically study their distribution within the natural numbers. About 200 years ago, the distribution of prime numbers began in earnest, and by the close of the nineteenth century, we had the prime number theorem. In the twentieth century, led principally by Paul Erdős, we began to study elementary number theory from this statistical viewpoint. One can see a direct progression, for example, from the ancient concepts of abundant and deficient numbers to distribution functions, the celebrated Erdős–Kac theorem, and the field of probabilistic number theory. In this talk, which celebrates the centennial anniversary of the birth of Paul Erdős, we shall see some of the triumphs of this way of thinking about elementary number theory, and we shall see that this statistical viewpoint is flourishing. (Received August 12, 2013)