Multinomial probabilities. The probability of drawing a particular sequence of balls containing exactly n_i of color i balls is $p_1^{n_1} \cdots p_r^{n_r}$. The number of possible sequences containing n_i of color i balls is the number of ways to form a partition of n distinct slots into subsets of cardinality $n_1, \ldots, n_r$ which is $\binom{n}{n_1,\ldots,n_r}$. Therefore, the probability of obtaining exactly n_i balls of color i is

$$\binom{n}{n_1, \ldots, n_r} p_1^{n_1} \cdots p_r^{n_r}.$$