1078-20-119 **M I Elashiry** and **D S Passman*** (passman@math.wisc.edu), Department of Mathematics, 603 Van Vleck Hall, University of Wisconsin, Madison, WI 53706. *Rewritable groups.*

A group G is said to satisfy the n-permutational property P_n if for all n-tuples $(g_1, g_2, \ldots, g_n)$ of group elements, there exists a nonidentity permutation $\sigma \in \mathrm{Sym}_n$ (depending upon the n-tuple) with $g_1 g_2 \cdots g_n = g_{\sigma(1)} g_{\sigma(2)} \cdots g_{\sigma(n)}$. Similarly, G satisfies the n-rewritable property Q_n if for all n-tuples $(g_1, g_2, \ldots, g_n)$, there exist distinct permutations $\sigma, \tau \in \mathrm{Sym}_n$ with $g_{\sigma(1)} g_{\sigma(2)} \cdots g_{\sigma(n)} = g_{\tau(1)} g_{\tau(2)} \cdots g_{\tau(n)}$. Obviously, P_n implies Q_n, but it is known that the converse is not true. Here we prove a conjecture of Blyth that Q_n implies P_m, where m is a fixed function of n. For this, we first show that there exist finite-valued functions $a(n)$ and $b(n)$ so that if G satisfies Q_n, then G has a characteristic subgroup N such that $|G : N| \leq a(n)$ and $|N'| \leq b(n)$. The conjecture then follows with $m = a(n)(b(n) + 1)$. (Received November 29, 2011)