The descent set of a sequence \( a_1 a_2 \ldots \) is the set of indices \( i \) such that \( a_i > a_{i+1} \). Consider the \( n! \) cyclic permutations of \( \{1, 2, \ldots, n + 1\} \) written in one-line notation, and for each one of them remove the last entry \( \pi(n + 1) \). We show that the descent sets of these objects have the same distribution as the descent sets of permutations of \( \{1, 2, \ldots, n\} \). We give a bijective proof of this fact, as well as an alternate derivation using work of Gessel and Reutenauer. (Received August 27, 2009)