1017-16-51 **Timothy Kohl*** (tkohl@bu.edu), Department of Mathematics and Statistics, Boston University, 111 Cummington Street, Boston, MA 02215. *Groups of Order 4p, Twisted Wreath Products and Hopf-Galois Theory.*

The work of Greither and Pareigis details the enumeration of the Hopf-Galois structures (if any) on a given separable field extension. We consider the cases where L/K is already classically Galois with $\Gamma = Gal(L/K)$, where $|\Gamma| = 4p$ for $p > 3$ a prime. The goal is to determine those regular (transitive and fixed point free) subgroups N of $Perm(\Gamma)$ that are normalized by the left regular representation of Γ. A key fact that aids in this search is the observation that any such regular subgroup, necessarily of order $4p$, has a unique subgroup of order p. This allows us to show that all such N are contained in a 'twisted' wreath product, a subgroup of high index in $Perm(\Gamma)$ which has a very compu tationally convenient description that allows us to perform the aforementioned enumeration. (Received February 07, 2006)