1025-57-139 **Jozef H Przytycki*** (przytyck@gwu.edu), George Washington University, Washington, DC 20052, and **Maciej Niebrzydowski**. *Homology of dihedral quandles.*

We solve the conjecture by R. Fenn, C. Rourke and B. Sanderson that the rack homology of dihedral quandles satisfies $H_3^R(R_p) = Z \oplus Z_p$ for p odd prime. We also show that $H_n^R(R_p)$ contains $Z_p$ for $n \geq 3$. Furthermore, we show that for $p = 3$ the torsion of $H_n^R(R_3)$ is annihilated by 3. We also prove that the quandle homology $H_4^Q(R_p)$ contains $Z_p$ for p odd prime. We conjecture that for $n > 1$ quandle homology satisfies: $H_n^Q(R_p) = Z_p^{f_n}$, where $f_n$ are "delayed" Fibonacci numbers, that is, $f_n = f_{n-1} + f_{n-3}$ and $f(1) = f(2) = 0, f(3) = 1$. We propose the method of approaching the conjecture by constructing rack homology operations $H_n^R(R_p) \to H_{n+1}^R(R_p)$ and $H_n^R(R_p) \to H_{n+2}^R(R_p)$, and quandle homology operations $H_n^R(R_p) \to H_{n+2}^R(R_p)$ and $H_n^R(R_p) \to H_{n+3}^R(R_p)$. We conjecture, and partially prove (http://arxiv.org/abs/math.GT/0611803), that the above operations are monomorphisms and the images (in appropriate dimensions) are disjoint. To approach the general conjecture about $H_n^Q(R_p) = Z_p^{f_n}$ we need one more quandle homology operation $H_n^Q(R_p) \to H_{n+4}^Q(R_p)$, construction of which is an open problem. (Received January 20, 2007)