1072-20-216 **Allen Hatcher** and **Dan Margalit*** (margalit@math.gatech.edu). *Torelli groups and symplectic groups.*

The mapping class group $\mathrm{Mod}(S_g)$ of a closed orientable surface S_g is the group of orientation-preserving homeomorphisms of S_g, considered up to isotopy. The action of $\mathrm{Mod}(S_g)$ on $H_1(S_g;\mathbb{Z})$ gives rise to a surjective representation $\mathrm{Mod}(S_g) \to \mathrm{Sp}(2g,\mathbb{Z})$. In joint work with Allen Hatcher, we give a new proof of a theorem of Birman and Powell that gives a generating set for the kernel of this representation. We will also discuss applications to subgroups of $\mathrm{Mod}(S_g)$ and $\mathrm{Sp}(2g,\mathbb{Z})$. (Received June 28, 2011)