1041-05-134   **Andrew Mathas** (`a.mathas@usyd.edu.au`), 6188 Bradley Hall, Hanover, 03755, and **Rosa Orellana*** (`rosa.c.orellana@dartmouth.edu`), Department of Mathematics, 6188 Kemeny Hall, Hanover, 03755. *Descent algebras for complex reflection groups.*

We will discuss an analogue of the Solomon descent algebra for the complex reflection groups of type G(r, 1, n). As with the Solomon descent algebra, our algebra has a basis given by sums of 'distinguished' coset representatives for certain 'reflection subgroups'. We explicitly describe the structure constants with respect to this basis and show that they are polynomials in r. This allows us to define a deformation, or q-analogue, of these algebras which depends on a parameter q. We determine the irreducible representations of all of these algebras and give a basis for their radicals. Finally, we show that the direct sum of cyclotomic Solomon algebras is canonically isomorphic to a concatenation Hopf algebra.

This is joint work with Andrew Mathas (Received August 08, 2008)