1054-13-9 **Michael Siddoway*** (msiddoway@coloradocollege.edu), Department of Mathematics, Colorado College, 14 E. Cache Le Poudre Street, Colorado Springs, CO 80903, and **Pham Ngoc Anh** (anh@renyi.hu), Renyi Institute of Mathematics, Hungarian Academy of Sciences, 1364 Budapest, Pf. 127, Budapest, Hungary. *"Divisibility Theory of Semi-Hereditary Bezout Rings".*

The "divisibility theory" of a commutative ring is the semigroup of finitely generated ideals partially ordered by inverse inclusion. For a Bezout ring this amounts to the semigroup of principal ideals. The semi-hereditary property insures that all such ideals are projective. A semigroup S is Bezout if it admits "greatest common divisors," and is "semi-hereditary" if for each a in S there is an idempotent in S that generates the annihilator of a. Our main result states that a semigroup is a semi-hereditary Bezout semigroup if and only if it is isomorphic to the semigroup of principal ideals in a semi-hereditary Bezout ring partially ordered by reverse inclusion. This work recalls the studies of Krull on valuation domains and Kaplansky, Jaffard, and Ohm on Bezout domains. Our results are the first major developments along these lines for rings with zero divisors. (Received May 12, 2009)