1015-13-276 W. Hassler, R. Karr* (rkarr@fau.edu), L. Klingler and R. Wiegand. Large indecomposable modules over local rings. Preliminary report.

Let (R, \mathfrak{m}, k) be a commutative local ring. We say R is *Dedekind-like* provided R is one-dimensional and reduced, the integral closure of R is generated by at most 2 elements as an R-module, and \mathfrak{m} is the Jacobson radical of R. Now, suppose S is a commutative local ring that is *not* the image of a Dedekind-like ring. Take a finite set \mathcal{P} of non-maximal prime ideals of S and assign a non-negative integer n_Q to each prime Q in \mathcal{P} . Our main theorem is as follows: Up to a mild constraint on the n_Q 's, we can build an infinite number of pairwise non-isomorphic indecomposable S-modules M such that M_Q is S_Q -free of rank n_Q . We will sketch a proof of our theorem in the case that some power of the maximal ideal of S requires 3 generators. (The opposite case, as it turns out, is somewhat harder to prove.) (Received February 07, 2006)