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([tmorrell@wustl.edu](mailto:tmorrell@wustl.edu)) and **Cory Scott**. *Elliptic Reciprocity*.

We define the notions of an elliptic pair, an elliptic list, and an elliptic cycle over a square-free positive integer  $d$ , concepts related to the notions of amicable pairs and aliquot cycles for elliptic curves introduced by Silverman and Stange. We then settle a question left open by Silverman and Stange, using elliptic pairs to show that for  $d = 3$  (in particular,  $j = 0$ ) there exist elliptic cycles of length six, thereby proving that there exist aliquot cycles of length greater than two for elliptic curves with complex multiplication. We further explore the connections between elliptic lists and quadratic prime-generating polynomials, deriving an upper bound for the lengths of the lists as a function of  $d$ . (Received January 15, 2013)