1056-05-997 **Timothy L Vis*** (Timothy.Vis@ucdenver.edu), Department of Math. and Stat. Sciences, Campus Box 170, PO Box 173364, Denver, CO 80217-3364. *Generalized Oval Derivation.*

We generalize techniques of Basile and Brutti (1979) and Assmus and Key (1990) that replace lines in an affine plane with ovals to produce another affine plane. In particular, we show that the derivation techniques can be applied to structures much more general than ovals without weakening any of the results. We also show that the planes obtained through these techniques are always isomorphic to the original planes, answering in the negative a question left open in Assmus and Key. We classify a group of collineations inherited through the derivation procedure that is always either the full group of such collineations or, under certain circumstances, an index two subgroup of the full group of such collineations. We finally describe the derivation procedure as a map on the points of the planes with the aim of understanding relationships between different structures in the affine plane under investigation. (Received September 21, 2009)