

1086-F5-871

Meighan I. Dillon* (mdillon@spsu.edu), SPSU, Mathematics Department, 1100 S. Marietta Pkwy SE, Marietta, GA 30060. *The History of Motion in Geometry*. Preliminary report.

Pappus's proof of the congruence of base angles in an isosceles triangle is much shorter and cleaner than Euclid's proof. We know from *The Elements* that Euclid was a master proof-writer. Why would he have missed Pappus's proof? We can never know the answer to that question, but one possible problem with Pappus's proof is that it seems to involve moving a triangle. Motion was off-limits in geometry until late in the 19th century. Once Klein and Lie brought groups into the picture, though, geometers had a means for dealing with motion formally and geometry changed for good. This talk is a brief history of the role of motion in geometry, why it had to stay out for so long, how it got in, and what happened once it did. (Received September 14, 2012)