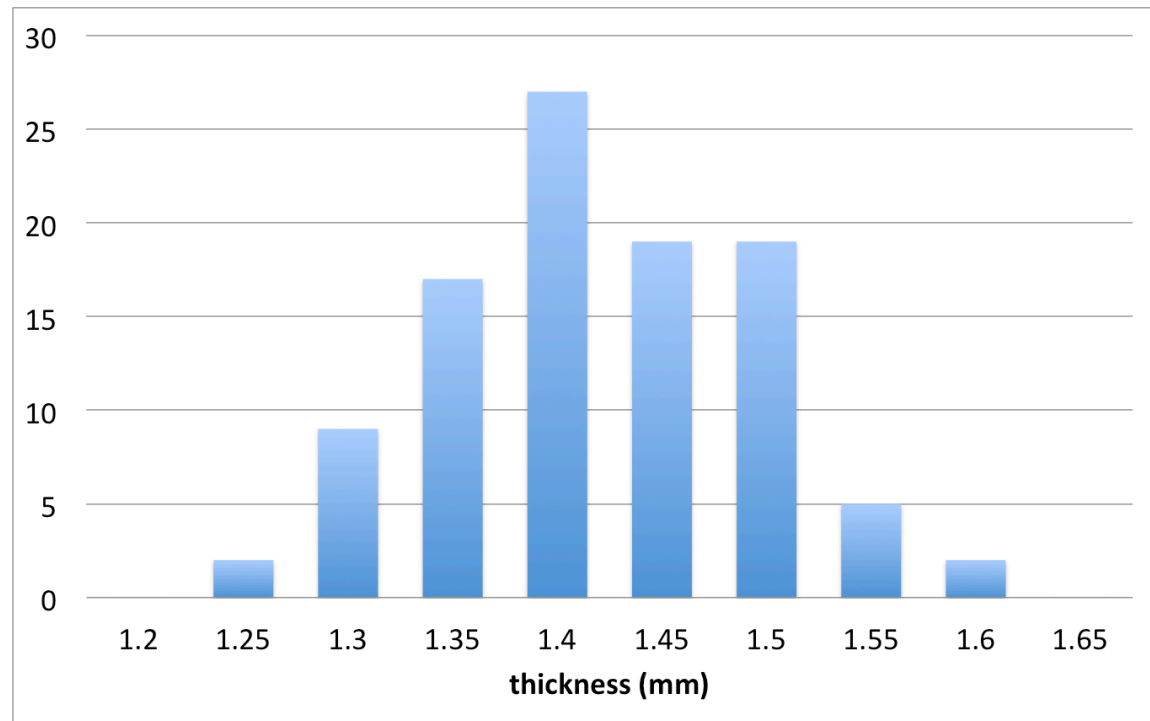


penny thickness

A histogram of the measured thickness of 100 new pennies (which haven't been worn appreciably and should all be the same thickness) using a crude micrometer. The average thickness for this sample is 1.42mm and the RMS of the distribution is 0.07mm.

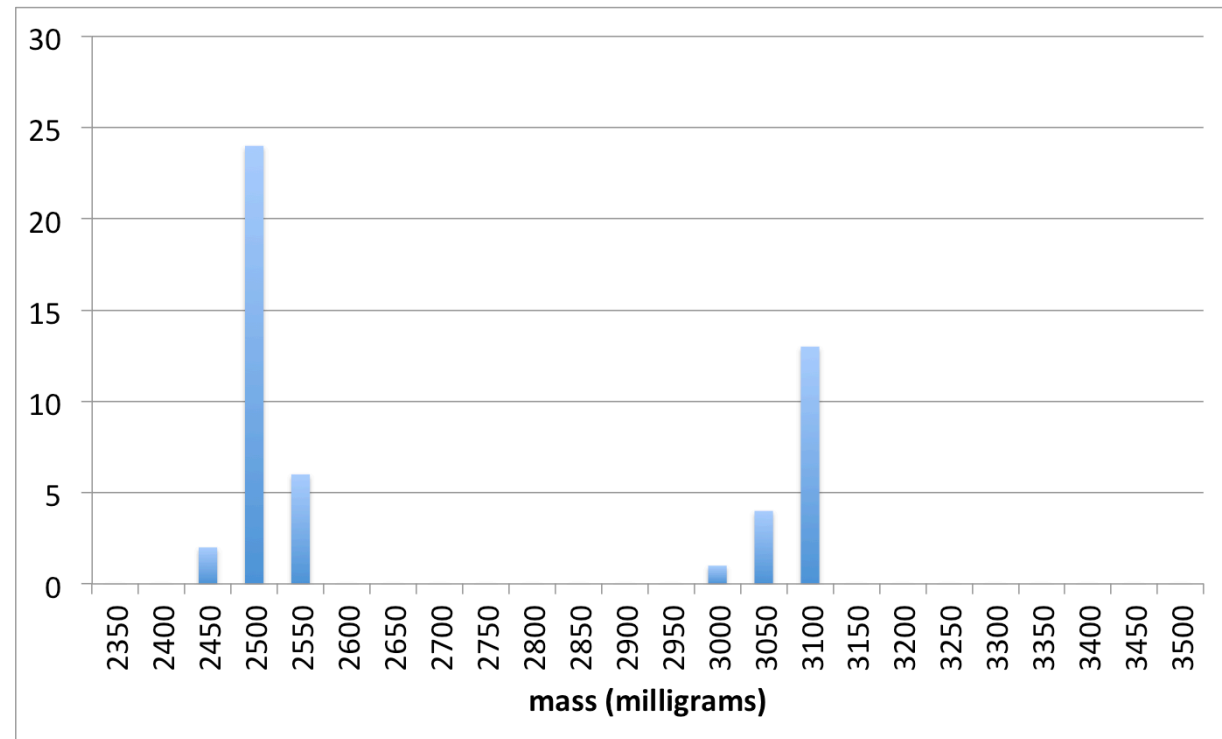


The thickness of a new penny is designed to be 1.52mm, considerably thicker than the average of the sample above. The shift in the distributions suggests some kind of systematic error in the measurement. In this case, the two faces of the micrometer are not exactly parallel; on one side the micrometer, where we made all the measurements, it measures a little too low.

penny mass

A histogram of the masses of a sample of 50 pennies measured using a jeweler's scale. The two peaks in the distribution show pennies

- 1) prior to 1982 made primarily of copper, with masses around 3.1g, and
- 2) after 1982 made primarily of zinc, with masses around 2.5g.



penny mass by year

A scatterplot of the mass of a sample of 50 pennies according to year. The drop in mass in 1982 shows when the composition of pennies changed, from mostly copper to mostly zinc.

