

# Line drawings from coins: The easy way

by Douglas D. Smith

When called upon to produce a monthly meeting notice for the local ancient coin club,<sup>1</sup> I began looking for a way of reproducing coin illustrations as part of the newsletter. Simply pasting photos on the original page produced a terrible result when photocopied. Details blocked up and contrast increased greatly, with hard-to-predict results. Since I already owned a low priced scanner<sup>2</sup> for my computer the next idea was to scan the photos into the computer and print out the results as part of the document. While this worked much better than the photos, there was still luck involved in finding the right density of image on the original that would survive the photocopy process. Since the difficulty centered on keeping middle tones looking right, I decided to give up on reproducing continuous tone images and try to convert the photos into line drawings.

Previously, I had achieved great success in scanning line drawings from old reference books,<sup>3</sup> so it seemed a simple step to set the scanner for line drawing and go to it. The results were disappointing to say the least. Detail was never good over any large area of the coin, but could be moved from area to area by adjusting the density control. I was able to produce a somewhat better result scanning photos from high quality European auction catalogs, so I (wrongly) assumed the difference was due to the screening of the printed images. Since the desire was to reproduce photos of my coins, rather than what had sold recently in Europe, this was a serious problem.

About this same time I began experimenting with different lighting techniques for coin photos. For years I had taken pleasing photos of coins by using one light at about a 45 degree angle from the top of the coin. One experiment was with 'axial lighting': when the light source comes directly from the camera position. This is usually achieved by taking the pic-

ture through a pane of glass positioned at a 45 degree angle under the lens. The light is reflected off this glass onto the coin, and the image passes through the glass and into the lens. Each of these reflections wastes more light than it uses, so exposure time and light strength requirements increased greatly. Again, looking for a more simple approximation, I tried placing the light as close as possible to the camera, and by using a long focal length lens<sup>4</sup> I was able to reduce the effective angle of the light to almost seem to come directly from the lens itself.

Photographs taken with axial lighting do not really illustrate the coin itself, but rather show the glare from the coin's surface. This tends to minimize the effect of surface color variations, and does a particularly nice job of bringing out the legends. It also controls the glare and shadows that make photographing high relief coins difficult. While the photo might be said to be a less accurate record of the individual coin, it is probably a much better record of the coin type. The difference is similar to that which most people experience when looking at professional portraits compared to their passport photos. It soon becomes obvious why the high price sale catalogs use axial lighting!

After the best possible scan density is determined through trial and error, there will still be some touch-up work needed using the photo editor tools that come with scanners. Weak letters may be strengthened and extraneous marks may be removed. Some coins require more help than others, but this technique will produce a drawing that will reproduce on any photocopier in crisp black and white.

#### Footnotes:

- 1 Ancient Numismatic Society of Washington.
- 2 Logitech Scanman.
- 3 Cohen has good drawings for this purpose.
- 4 A 200mm lens on 35mm format works well, allowing the camera to be two or three feet from the coin.



Original photograph



As scanned without retouching



Background trimmed away



Details strengthened with computer "tools"

