Dyeing Wool with Onion Skins

I have about 50 grams each of yellow and red onion skins. It is hard to find exact weights or percentages for what weight of onion skins are needed for what weight of fiber, but one source suggested that 25 grams of onion skins will be sufficient for 100 grams of fiber, so I should be able to dye 400 grams of fiber. I started with 100 grams, half dyed in yellow onion skins and half in red. Since changing the pH of the dye can change the color, I plan to split each 50 grams into thirds and do one after bath of vinegar and one of ammonia to alter the color of two of the sections of each dye lot, so I'll hopefully get 6 somewhat different colors or shades. I've decided to dye wool roving since I don't know what sort of project I'll want to do. With the dyed roving I can spin it into whatever weight yarn I might want, or use the roving in a felting project. I'll use nylon stockings to keep my wool sections separate.

Equipment and stuff I used:
Postal or food scale. Mine will show grams or ounces.
Non-reactive pots, mine are stainless steel, but enamel or canning pots are fine.
A wooden spoon I don't mind coloring to stir.
Three plastic dishpans, two for after-baths, one for wetting
Ammonia
Vinegar
Distilled water, I used three gallons
Nylon stockings for protecting the roving (I may be over-cautious)
Candy thermometer
waterproof gloves

I’m not sure what the pH of my tap water is, or what effect the minerals in my water will have on the dyes, so I’ve decided to use distilled water. The evening before dyeing, I filled two pots with 25 grams each of the yellow and red skins, and enough distilled water to cover. I brought them to just a boil, and then simmered them for 30 minutes. Then I turned off the heat, covered the pots, and let them steep overnight.

In the morning I poured the liquid through a strainer into a dishpan and returned the liquid to the pots. I put my roving into nylon stockings, wet them thoroughly in distilled water, and added them to the pots. I heated the pots to until they registered 180 degrees F on the thermometer, turned the heat to low, covered the pots, and let them simmer for an hour. After the hour I could see the wool had taken a lot of color, so I turned off the heat and let the wool cool in the pot while I did some other chores, to reduce the risk of shocking the wool with too quick a change in temperature.

I made up a couple of dishpans with about a quart of water, and added 1/2 cup vinegar to one and 1/2 cup ammonia to the other for after-baths. I pressed most of the dye liquid out of a roving/stocking from each pot, and put one of each color into each bath.

My Results:
I did not see much difference in the color from the vinegar bath, and the ammonia did darken the color a bit. I put another 50 grams wool in the same dye bath and repeated the whole process since it appeared there was still a lot of color in the water. I got some lovely light tan's, but saw little difference in color by putting them in either vinegar or ammonia. They will be lovely colors to blend with some other fibers I have, like alpaca and camel, when I might like to add the elasticity of wool to the yarn.
I did not get the bright yellows and even green tones that I’ve seen on-line, and decided to go ahead and do another 100 grams with my remaining onion skins and pro-mordant the wool with alum and cream of tartar, since that is pretty easy. For my 100 grams wool a 10% amount of alum is 10 grams, and 5% cream of tartar is 5 grams, which I mixed up and added to the pot with the wool. I brought it to a boil, reduced to simmer for an hour, and then removed the wool and added it to my new pots of onion skin dye prepared the same as before.

Again, the vinegar bath had little effect on the color, but the ammonia bath had some effect on the yellow onion, and more effect on the red.

Well my dabbling has left me with a lot of shades of rust and bronze wool, and a lot of questions for Stefania, like why don’t I get yellow or green like the other folks? Maybe different species of onions yield different results. Undoubtedly different mordants will change the colors as well. I like the colors and can find a use for them, but a little fooling around uses up a lot of wool. It would be a great advantage to work with an expert and not need to use up so much wool. And if onion skins can do all this, imagine what you can do with the indigo, cochneal, logwood, fustic, and madder that Stafania will be bringing!