pcray 1231 wrote:
Red pigmentation is from keratin...

Not sure this is true. Fingernails, Rhino horns etc then yes, keratin. Red coloration can come from eating certain shrimps, krill etc but that has more to do with changing the color of the flesh rather than skin.

BrooksAndHooks wrote:
I think the sun/shade likely does play a difference, could be similar to the relationship of human skin and melatonin.

Yea more like this ^.

Trout alter the level of melanin in cells call chromatophores and they do it to match background color. Fish over a dark background increase output of Melanin Concentrating Hormone to darken the skin by raising the melanin in the chromatophore. Light colored substrate they do the opposite. Starts to happen within hours of a change in background light levels with a full change in a day or so.

Individual trout vary in how they get through life and some specialize both to habitat (in the same stream) and feeding behavior. Hence in the same stream (as long as it has variation in background color) they'll be some fish that spend most of their time over light backgrounds and some that spend most over dark and be light skinned or dark accordingly. I have pics somewhere of light and dark fish caught within a couple of casts on the Little J.

Patterns of color and skin lightening and darkening also vary with health and reproductive status and as far as I'm aware the same process is involved.