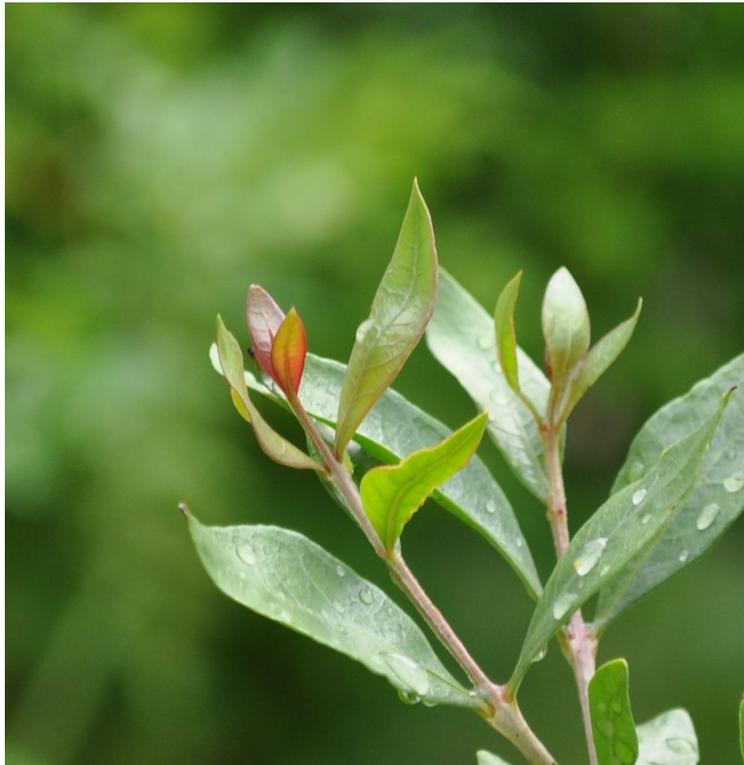


Ancient Sunrise® Henna for Hair

Foreword

A friend asked me to decorate her skin with henna when I was teaching at Kent State University in 1992. It was part of her culture and she loved to have henna for celebrations. I had heard of henna but didn't know much about it, so I began researching. My curiosity quickly outran the university's library; I found little published on the subject of henna in the English language. When I asked people from countries where henna had been in cultural use in centuries past, I got some reminiscences, but little substantive information. I also asked hairdressers about henna; they all insisted it was dangerous and ruined one's hair.

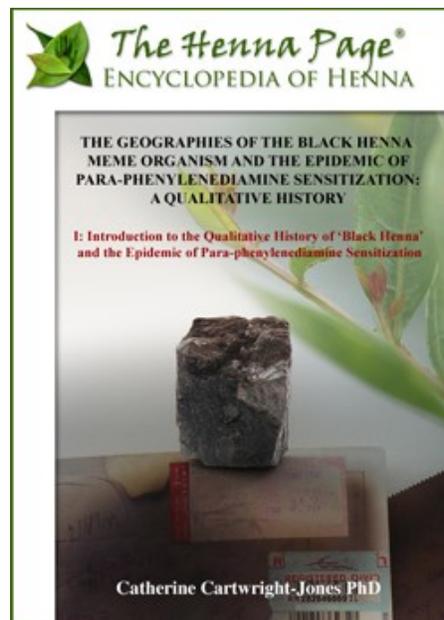


Henna: *lawsonia inermis*. New leaves grow after summer rain.

The more I researched, the more I found stylists' disdain for henna perplexing, and the more I felt challenged by the lack of research on henna published in English. I gradually assembled five file cabinets of scarce and scattered information and began to form some ideas about the science, botany, and history of henna that other people had not, possibly because they were always focusing on something else. There were scraps of information on henna in anthropology, botany, and chemistry, but these scraps were always incidental to some other focus, such as kinship patterns, semi-arid zone habitats, and quinones. Though people often claimed "the history of henna is lost in the mists of time" or that it was somehow secret, I thought I saw connections and a continuous interrelationship of the science and cultures of henna.

I did my master's work on henna, focusing the master's thesis on henna "Developing Guidelines on Henna: a Geographical Approach,"¹ as a way to position future research on henna as a multidisciplinary approach, drawing from cultural history, commerce, globalization, agriculture, ethnobotany, ethnomedical practices, and bioscience, rather than just a folkloric footnote in Orientalism.

Referencing the mass of information I'd constructed on henna by 2014, I co-authored "Lawsonia inermis L. (henna): Ethnobotanical, phytochemical and pharmacological aspects" for the Journal of Ethnopharmacology."² This research work was a first in academic publication in that it was a multidisciplinary comprehensive review of henna, a collaboration among chemists, botanists, and physicians as their research linked to phytopharmacology: the paper linked the corroborations between laboratory science research on lawsonia and lawsonia inermis and the ordinary individuals' observations of henna which had passed into folk practices and superstitions.



“The Geographies of the Black Henna Meme Organism and the Epidemic of Para-phenylenediamine Sensitization: A Qualitative History.”

I filed my doctoral dissertation, “The Geographies of the Black Henna Meme Organism and the Epidemic of Para-phenylenediamine Sensitization: A Qualitative History”³ in 2015. This work went beyond henna and into the problem of ‘black henna’, a source of the current epidemic of para-phenylenediamine sensitization.

Henna is NOT black

¹ Cartwright-Jones, C., 2006. “Developing Guidelines on Henna: a Geographical Approach,” masters essay Kent State University, <http://www.hennapage.com/henna/encyclopedia/mastersessay/geoapproachtohenna.zip>

² Semwal, R., Semwal, D., Combrinck, S., Cartwright-Jones, C., Viljoen, A.M. 2014. Lawsonia inermis L. (henna): Ethnobotanical, phytochemical and pharmacological aspects. *Journal of Ethnopharmacology* 155: 80–103.

³ Cartwright-Jones, C. *The Geographies of the Black Henna Meme Organism and the Epidemic of Para-phenylenediamine Sensitization: A Qualitative History*. PhD dissertation. 2015. Kent State University, Kent, Ohio.



Images of 'before' and 'after' para-phenylenediamine 'black henna' on children⁴

Henna is NOT black. There is no such plant as 'black henna' though there are many products labeled 'black henna.' 'Black henna' products that stain skin black in an hour contain high levels of para-phenylenediamine. The higher the level of para-phenylenediamine applied to skin and the larger the area of the temporary black tattoo, the more likely it will cause a severe allergic reaction and life-long sensitization to the chemicals in oxidative hair dye.

A broad sensitization assessment in spring 2014 found that 16% of youths are sensitized to para-phenylenediamine in Manchester, UK,⁵ and much of that number was attributed to children having had 'black henna' temporary tattoos. The number of people sensitized to para-phenylenediamine has steadily risen since the late 1990's and will certainly continue to rise as more people acquire 'black henna' temporary tattoos on vacation or as a cultural cosmetic at a social or cultural festival such as weddings, Diwali, and Eids.

Pure henna has a high level of safety and is harmless when used for hair dye and temporary skin art. Pure henna stains skin and hair some color in the range of orange-red to coffee color. Pure henna cannot stain arm, leg, or torso skin black.

Mapping the use of 'black henna' temporary tattoos

⁴ Images of 'before and after' 'black henna' from Florida Department of Health

⁵ Smith V, Clark S, and Wilkinson M. "Allergic contact dermatitis in children: trends in allergens, 10 years on. A retrospective study of 500 children tested between 2005 and 2014 in one U.K. centre." *British Association of Dermatologists' Annual Conference*. Leeds Teaching Hospitals NHS Trust, Leeds, U.K. (2015).



- Areas where there is para-phenylenediamine 'black henna' activity in seasonal and informal economies.
- Home areas of tourists who patronize para-phenylenediamine 'black henna' in seasonal and informal economies.

Areas where para-phenylenediamine skin painting is common in informal economies of tourism, and the areas to which their patrons return

The map above shows the areas of seasonal and informal economies where artists apply para-phenylenediamine 'black henna' to tourists and the homelands to which the sensitized tourists return. There may be more males than females sensitized in vacation souvenir applications in areas of tourism, as larger skin decorations are often intended to emulate permanent, masculine tattoos. Judging by vacation photographs and journals posted online as well as medical reports at least half of the 'black henna' patrons were between the ages of two and fifteen. Consumer warning labels on home hair dye packaging may be insufficient to prevent injuries; many people were sensitized as young children on vacation, did not receive a correct diagnosis because pediatricians often were unfamiliar with the appearance of the injury and did not advise their patients of future oxidative hair dye sensitization, and the incident is forgotten over decades when these children grow up, mature, and decide to dye their graying hair.⁶ Others believe that they were painted with henna, a safe, natural, and traditional body art rather than a high concentration of para-phenylenediamine, so they are unaware that there is a sensitizing chemical in common between 'black henna' and oxidative hair dye.

Large demographics of cultural groups have been sensitized through 'black henna' replacing or augmenting traditional henna in social and religious celebrations. Para-phenylenediamine has

⁶ Burlaga. M.. "Public Warned Against Use Of Additives In Henna For Temporary Tattoos." *Northland News Center*. <http://www.northlandsnewscenter.com/news/local/Public-Warned-Against-Use-Of-Additives-In-Henna-For-Temporary-Tattoos-124789374.html> (June 30, 2011)

been used to decorate skin in cultural celebrations for twenty to forty years in areas of East Africa, the Arabian Peninsula and South Asia, and more recently in diaspora. This sensitized population is largely female, with multiple exposures of 20% to 60% para-phenylenediamine skin painting, each being applied with paste in contact with skin for a duration of twenty or thirty minutes. The awareness of the risk of skin reaction is not absent, but women's preference for fast, convenient, fashionable black skin art prevails over the estimation of risk. The practice, though not done before the 1970's, has been embedded in many communities for long enough that it is considered part of the culture.



- Areas where para-phenylenediamine 'black henna' is used in family and cultural celebrations as skin decoration.
- Diasporic areas where para-phenylenediamine 'black henna' is used in family and cultural celebrations as skin decoration.

This map shows the areas where women use para-phenylenediamine 'black henna' to ornament skin for weddings, Eids, and other religious and cultural celebrations, and areas of diasporic communities where the practice is continued.

Attempts by governments to ban 'black henna' have largely been ineffective as the desire for fast, black temporary tattoos continues, and the patrons either do not know the risk, don't think they will be affected, or don't consider the risk of injury to be significant. Enforcement of bans has rarely succeeded because of the availability of para-phenylenediamine and 'black henna' and the seasonal informal economies of the practitioners.

“Henna for Hair” at hennaforhair.com

I wrote the book “Henna for Hair” after I found a research paper on the hair dye industry, “Dyeing with Henna and Related Materials.”⁷ This paper detailed the chemistry of “compound henna,” information about compound henna that had been kept a trade secret by the hair dye industry, which was causing the rumors and misinformation about henna. I wrote the first “Henna for Hair” book and posted it at hennaforhair.com to help people get accurate information on the science and art of dyeing hair with henna. That book was downloaded over a quarter of a million times and translated into several languages. The effect of all of those free downloads was to upset many long-held and highly inaccurate assumptions about henna, and to reinvigorate interest in dyeing hair with henna.

For decades the hair dye industry has drifted towards highly profitable proprietary chemical solutions. It has abandoned a safe, perfectly functional solution that had worked well for over six thousand years but which could not be patented and could not be hurried. Henna was not a good fit for the capitalist modern mass production consumer paradigm that requires a high volume of identical products producing fast, reliable results to yield maximum profits for corporations and shareholders. Henna is an inherently variable plant and requires time and experience to produce optimum dye results.

Once, in a large part of the world, every woman knew how to henna her hair. Women learned how to mix and apply henna from women in their families, or from neighbors at the village bath. The critical learning process of how to ‘do’ henna, best understood by watching another person mix and apply henna does not reduce to a few sentences on a package very well. Once, every woman could bake her own bread, make her own yoghurt, and mend her own clothing: industry offered convenient solutions which created problems: inferior bread, yoghurt full of chemicals, and poor quality, disposable clothing. When these skills are lost, they are not always easy to regain. The family and village art and craft of henna was lost as the chemical hair dye industry grew.

After I completed my PhD, I decided to put together a second book of the art and science of dyeing hair with henna, again free and downloadable. I hoped ‘Ancient Sunrise® Henna for Hair’ could bridge the learning gap that was once filled by regular visits to the village bath. I wanted to make the book as thorough as possible, a resource for beginners at home, professional cosmetologists, as well as people who wanted in-depth research and analysis on henna. The urgency of writing the new book came from calculating the numbers of people sensitized to oxidative hair dye by ‘black henna’ temporary tattoos in the conclusion of my dissertation. Learning to henna hair is no longer just a matter of beauty; it is a matter of keeping people out of the hospital. People who are sensitized through ‘black henna’ temporary tattoos have extreme sensitizations, and these sensitizations are life-long.⁸ A person who has had one of these black temporary tattoos may have more than an itch or puffy eyes following chemical hair dye; the coal tar derivatives in chemical hair dye may put the person in intensive care or the morgue.

⁷ Amro, Bassam Izzidin, 1989, “Dyeing with Henna and Related Materials.” thesis for PhD at the University of Wales.

⁸ Onder, M.,2003. "Temporary holiday“tattoos” may cause lifelong allergic contact dermatitis when henna is mixed with PPD." *Journal Of Cosmetic Dermatology* 2, no. 3/4: 126-130.

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