

# “INDIAN YELLOW COMES FROM THE URINE OF COWS THAT EAT ONLY MANGO LEAVES. IN INDIA.”

## BUSTED!!

This particular pigment myth has shown remarkable resilience despite its own inherent stupidity. It is still found in otherwise reputable research papers and websites that are, in all other respects, reliable. It does, however, have several major flaws that make it implausible even without the evidence. Let's start with the myth.



*Indian yellow pigment is claimed to have been originally manufactured in a single village in rural India from the urine of cattle fed only on mango leaves and water. The only printed source that describes the process of refining Indian yellow from cow urine is a single letter written by a Mr. T.N. Mukharji of Calcutta, who claimed to have seen the color being made, to Nicholas Eastaugh, who subsequently reports in his Pigment Compendium that a description of the above process was given by Mukharji, who claimed to have studied the process in Monghyr, north-east Bihar, India. Mukharji describes how urine was collected in small pots, cooled, then concentrated over a fire. The liquid was then filtered through cloth and the sediment collected in balls, then dried over a fire and in the sun. Importers in Europe would then wash and purify the balls, separating greenish and yellow phases. Aside from this letter, there appear to be no written sources from the time period mentioning the production of Indian yellow. The urine was collected and dried, producing foul-smelling hard dirty yellow balls of the raw pigment, called "purree." The process has also been reported to have been declared inhumane and outlawed in 1908.<sup>1</sup>*

Now, if you're willing to believe that, let me tell you about this bridge I have to sell you. It could happen you say? Ok. Here are some problems with this story.

- 1) Mango leaves contain urushiol, the same toxin found in poison ivy. It causes contact dermatitis, and is poisonous to cattle. Not only would they be killing extremely valuable (and sacred) livestock, they'd be doing it in a very, very itchy way that also damaged mango trees, another valuable food source.
- 2) There is no law in India's records forbidding the practice, either from 1908 or otherwise, according to Victoria Finlay's research mentioned in further detail below

- 3) There is no magical chemical process for extracting mango leaf dye in a cow's digestion that could not be done in the usual manner by crushing the leaves, macerating them in an acid bath, and then letting the dye dry off naturally. Extracting dye from plants using acid or urine dates back to the Roman times, and does not involve trying to put a bucket under a 2000 lb animal that you're starving to death with poisonous mango leaves.

In *The Art of Painting in Oil and Fresco*, originally published in 1839, M.J.M.L. Merimee states a possible source for Indian Yellow:

*...the coloring matter is extracted from a tree or large shrub, called memecylon tinctorium, the leaves of which are employed by the natives in their yellow dyes. From a smell like cow's urine, which exhales from this colour, it is probable that this material is employed in extracting the tint of the memecylon.*<sup>2</sup>

In 1844, chemist John Stenhouse<sup>3</sup> examined the origin of Indian Yellow. Stenhouse reported that Indian Yellow was commonly thought to be composed of gallstones from different animals, including camels, elephants, and buffalos, or deposited from the urine of some of these animals. He carried out a chemical analysis which found no traces of ammonia (which should be found in ALL urine) and, based on its reaction to treatment with various acids and bases, concluded that it was in fact of vegetable origin, and was "the juice of some tree or plant, which, after it has been expressed, has been saturated with magnesia and boiled down to its present consistence.". He also reported that it bore a strong resemblance to berberine, a dye made from the stems and bark of several plants like goldenseal or *Berberis*, which is still used in Northern India today.

In her 2004 book *Color: A Natural History of the Palette*, Victoria Finlay examined whether Indian Yellow was really made from cow urine. Finlay searched for legal records concerning the supposed banning of Indian yellow production in both the India Library in London and the National Library in Calcutta, and found none. She visited the town in India mentioned in Mukharji's letter, but found no trace of evidence that the color had ever been produced there. None of the locals she spoke with had ever heard of the practice in the village where it was supposedly an industry for 400 years (15<sup>th</sup> to 19<sup>th</sup> centuries).<sup>4</sup>

In summary, there is no hard evidence that Indian yellow was ever made by feeding cattle mango leaves, and we have two separate accounts indicating Indian Yellow is a vegetable dye, as well as a complete lack of legal documentation regarding this practice in either Indian law, or in the local oral history of its supposed location of manufacture.

#### References

- 1) "Indian Yellow," *Pigments through the Ages*.  
<http://www.webexhibits.org/pigments/indiv/history/indianyellow.html>. Accessed July 21,2010.
- 2) Merimee, M.J.F.L. *The Art of Painting in Oil and Fresco*. Kessinger Publishing. ISBN 9781437141160.
- 3) Stenhouse, John, "Examination of a yellow substance from India called Purree from which the pigment called Indian Yellow is manufactured." *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science*, third series, November 1844.
- 4) Finlay, Victoria. *Color: A Natural History of the Palette*. Random House. ISBN 0812971426,