



**The Real Poison Tree:
the Manchineel Tree, *Hippomane mancinella***

by Myra L. Weiner

Long ago when Christopher Columbus set out to explore the New World on his second voyage in 1493, his ship stopped in the Caribbean region. There, the sailors relaxed on the pristine beaches and were sitting under a beautiful evergreen tree. Unbeknownst to them, the tree contained poisons capable of causing severe skin and eye reactions. Consumption of the tree's fruit could be lethal. The local natives were aware of the tree's toxic potential and even used its sap, leaves and bark to attack enemies. The story of the poison tree, the Manchineel Tree, provides a fascinating look at one of nature's most potent poisons.



The Machineel Tree



The fruit, the little apple of death

The evergreen **manchineel tree**, *Hippomane mancinella*, is a species of flowering plant in the spurge family (Euphorbiaceae). Its native range stretches from tropical southern North America to northern South America. The tree grows up to 49 feet tall. It has greyish bark, small greenish-yellow flowers, and shiny green leaves. The leaves are simple, alternate, very finely serrated or toothed, and 2–4 inches long. The fruit are small green “apples.” The tree is recorded as the

world's most dangerous tree by the Guinness World Records. From:

<https://www.guinnessworldrecords.com/world-records/most-dangerous-tree-/>

Discovery and History of the Manchineel's Toxic Effects

Diego Alvarez Chanca, a Spanish doctor, accompanied Christopher Columbus on his second voyage to the New World in **1493**. While in the Caribbean he wrote about the manchineel:

“There were wild fruits of various kinds, some of which our men, not very prudently, tasted; and on only touching them with their tongues, their mouths and cheeks became swollen, and they suffered such a great heat and pain.”

Reference: Ybarra, A. M. F. De. “A Forgotten Worthy, Dr. Diego Alvarez Chanca, Of Seville, Spain.” *JAMA: The Journal of the American Medical Association* XLVII.13 (1906): 1013-017.

Copy attached in this section of the website.

Oral Exposure

The fruit of the manchineel is known as “*manzanilla de la muerte*” which translates to “little apple of death”. Eating the fruit can be lethal; thus, the oral route of exposure is a toxic route of exposure.

Historically, there are many myths and legends surrounding the manchineel. A popular one is that native South Americans used manchineel poisoned arrows against the invading Spanish Conquistadors. It is often written, but not confirmed, that Ponce de Leon, of Fountain of Youth fame, was killed by such a poisoned arrow in Florida. It is also reported that natives would poison spring waters with manchineel leaves, as a defense against their invaders. Reference: Lauter, W. M., Laretta E. Fox, and William T. Ariail. “Investigation of the Toxic Principles of Hippomane Mancinella, L. I. Historical Review.” *Journal of the American Pharmaceutical Association* 41.4 (1952): 199-201. Thus, drinking water poisoned by the manchineel tree parts or being shot with a poisoned arrow can be lethal.

A more recent incident of toxicity was reported by a doctor. While on holiday in Tobago in 1999, radiologist Nicola Strickland strolled the beaches picking up seashells. She gazed upon

small green fruits and impulsively bit into one. Finding it sweet and delicious she suggested her friend try a bite, too. She wrote of her account: *“The symptoms worsened over a couple of hours until we could barely swallow solid food because of the excruciating pain and the feeling of a huge obstructing pharyngeal lump. Sadly, the pain was exacerbated by most alcoholic beverages, although mildly appeased by pina coladas”* Reference: Strickland, N. H. *“My Most Unfortunate Experience: Eating a Manchineel “beach Apple””* *BMJ*, 321-428. (2000): doi: <https://doi.org/10.1136/bmj.321.7258.428> (Published 12 August 2000).

Dermal Exposure

Touching parts of the tree exposes the skin, hence the dermal route of exposure can also cause toxicity. It happens that the manchineel exudes a toxic latex that severely irritates the skin. All parts of the manchineel can produce the noxious liquid, and bruising the fruit increases the amount of toxins. Owing to the thickness of the skin on our hands, they are rarely affected, though they still may be covered with latex which can then be transmitted to more “sensitive” body areas.

For example, in 1936 there were two male patients who had manchineel juice on their hands while urinating, and unwittingly transferred the toxic latex to their “sensitive” area: *“The first had severe burning pain of the penis, preventing the patient from sitting down; the lesion resembled a second-degree burn and there was total sphacelation [necrosis or gangrene] of the skin and mucous membrane of the preputial sac. The second showed a desquamation in shreds of the mucous membrane of the glanis penis.”* Reference:

<https://naturespoisons.com/2014/05/27/the-manchineel-tree-proof-that-mother-nature-hates-us/>

In another modern incident, four beachgoers in the West Indies sought shelter for an hour under a manchineel tree during a rainstorm. When rainwater strikes the tree, it can extract latex from any part of the tree, especially if there are cuts or nicks present. The toxic water then rained and dripped upon the unsuspecting shelter seekers. All four victims had some form of contact dermatitis and painful blistering. Making matters worse, the water soaked their clothing and bathing suits, thus exposing their “sensitive” areas to the painful latex infused water. All had a

very unpleasant experience but recovered. Reference: *J Travel Med.* 2011 Nov-Dec;18(6):422-4. doi: 10.1111/j.1708-8305.2011.00568.x. Epub 2011 Oct 12. Manchineel dermatitis in North American students in the Caribbean. Blue LM, Sailing C, Denapoles C, Fondots J, Johnson ES.

Due to the severe toxicity of the manchineel tree. Warnings are posted throughout areas where the trees can be found. Often a red ring with skull and crossbones is painted on the trunk.

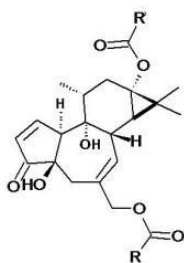
Examples of warning signs are shown below.

Posted Warnings



From: <https://naturespoisons.com/2014/05/27/the-manchineel-tree-proof-that-mother-nature-hates-us/>

What makes the Manchineel Tree so toxic?



12-deoxyphorbol-13,20-esters
R, R' = various long-chain alkyl, alkene

The key question is “*what makes the manchineel tree so toxic?*” This is a difficult question to answer because no single chemical is responsible.

The manchineel latex is a mixture of numerous chemical compounds, which are difficult to separate and identify. Common chemicals include deoxyphorbol esters (shown on the left) and corresponding alcohols. It is note-worthy that there are no alkaloids – nitrogen containing natural

compounds. Alkaloids, like nicotine or strychnine, are bitter; thus serving as a warning. The

manchineel fruit, devoid of alkaloids, is sweet. This makes it is tempting for both children and visitors. No matter how many warning signs are put up, someone will try to eat them. So just remember, Mother nature is in charge, and she put the manchineel tree here to remind us. **Don't eat, don't touch, don't look. Just stay away.**

Additional Historic References

William Ellis, ship's surgeon for Captain James Cook on his final voyage in the late 1700s, wrote: "On the fourth, a party of men were sent to cut wood, as the island apparently afforded plenty of that article; amongst other trees they unluckily cut down several of the manchineel, the juice of which getting into their eyes, rendered them blind for several days." From: *An Authentic Narrative of a Voyage Performed by Captain Cook and Captain Clerke, in His Majesty's Ships Resolution and Discovery, During the Years 1776, 1777, 1778, 1779, and 1780: In Search of a North-west Passage Between the Continents of Asia and America. Including a Faithful Account of All Their Discoveries, and the Unfortunate Death of Captain Cook. Illustrated with a Chart and a Variety of Cuts.*

In *The Buccaneers of America* (1678), **Alexandre Exquemelin** (1645-1707) wrote of his experience with the "tree called mancanilla, or dwarf-apple-tree" when in *Hispaniola* (modern day Haiti/Dominican Republic): "One day being hugely tormented with mosquitoes or gnats, and as yet unacquainted with the nature of this tree, I cut a branch thereof, to serve me instead of a fan, but all my face swelled the next day and filled with blisters, as if it were burnt to such a degree that I was blind for three days." From: *The Buccaneers of America; Part I, Chapter IV.*

Nicholas Cresswell, in his journal entry for Friday, September 16, 1774, mentions: "The Mangeneel Apple has the smell and appearance of an English Apple, but small, grows on large trees, generally along the Seashore. They are rank poison. I am told that one apple is sufficient to kill 20 people. This poison is of such a malignant nature that a single drop of rain or dew that falls from the tree upon your skin will immediately raise a blister. Neither Fruit or Wood is of any use, that I can learn." From: *Cresswell, Nicholas. The Journal of Nicholas Cresswell: 1774–1777.*

Literary Works Citing the Manchineel Tree

In Giacomo Meyerbeer's opera *L'Africaine* (1865), the heroine Sélika dies by inhaling the perfume of the manchineel tree's blossoms. From: "*Gallica: L'africaine : opéra en 5 actes / par Eugène Scribe ; musique de Meyerbeer. 1924*". *Bibliothèque nationale de France*. Retrieved 19 June 2016.

In the story "The Beckoning Hand" (in the 1887 collection of that name) by Grant Allen, a manchineel (spelled manchineal here) leaf is rolled in a cigarette in an attempt to poison a person. From: Allen, Grant (1887). *The Beckoning Hand, and Other Stories*. Auckland: The Floating Press. "The Beckoning Hand" (Project Gutenberg website). Accessed 14 August 2019.

In the 1958 film *Wind Across the Everglades*, a notorious poacher named Cottonmouth (played by Burl Ives) ties a victim to the trunk of a manchineel tree. From: White, Susan (2014).

"Chapter 14: Nicholas Ray's wilderness films: word, law, and landscape (p. 173)". In Rybin, Steven; Scheibel, Will (eds.). *Lonely places, dangerous ground: Nicholas Ray in American cinema*. Albany NY: State University of New York (SUNY) Press. ISBN 978-1-4384-4981-4.

In the 2018 Amazon series "Homecoming", the tree's leaves are part of a mind-altering drug administered to combat veterans to test its effectiveness in reducing PTSD symptoms.

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Based on <https://en.wikipedia.org/wiki/Manchineel> and <https://naturespoisons.com/2014/05/27/the-manchineel-tree-proof-that-mother-nature-hates-us/>