

**AN 11TH CENTURY ITALIAN SUNSCREEN:
Recipe from the book by Trotula of Salerno**



From Rosarium philosophorum sive pretiosissimum donum Dei

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THE TEXT: TROTULA

The Trotula refers to three medical manuscripts produced in the late 11th-early 12th century CE, connected with the University of Salerno in modern Italy. These books are attributed to a woman professor named Trota, although solid evidence of her existence is minimal. This recipe is from a modern English translation of *On The Diseases of Women (De passionibus mulierum)*. The book contains two slightly different versions of the recipe.

THE RECIPES

Version 1: *“An ointment that Salernitan women make that is very good for sunburn and fissures of any kind;... Take one ounce of lily root, two ounces of white lead, mastic and frankincense – of each half a dram-, one dram of camphor, one ounce of animal grease, and rose water as needed. Let it be prepared thus: let the lily root, having been cleaned, be cooked in water, and once this is extracted we grind it thoroughly. And we pour in the fat, which has been liquefied on the fire and well strained and cleaned of its salt in order to dissolve it. Then we put in the white lead, which has been dissolved in the rose water and somewhat pulverized. And note that this ointment is good both for the treatment of the above-mentioned conditions and for their prevention.”* From “On Treatments for Women”

1oz lily root

2oz white lead

½ dram mastic

½ dram frankincense

1 dram camphor

1oz animal fat

Rose water

Version 2: *“Against sunburn. Take root of domesticated lily, cleaned and cooked in water; pound it vigorously. Then take one ounce each of mastic powder and frankincense, two scruples each of camphor and white lead, pork grease with which it should be prepared, and let it be prepared likewise with rose water, and keep it for later use. It is prepared thus. We clean the lily root and we cook it with water. Having cooked it, we pound it vigorously, and we pour on fat liquefied on the fire and cleaned of salt and mixed. Then we place the above-mentioned powder in rose water. And it ought to be noted that this is good against sunburn and fissures of the lips and any kind of pustules in the face, and for excoriations and for preventing them.”* From “On Women’s Cosmetics”

Lily root

1oz mastic powder

1oz frankincense

2 scruples camphor

2 scruples white lead

Pork grease (lard)

Rose water

Both versions have the same ingredients and about the same instructions for preparation but the proportions are different which I theorized would result in different thicknesses in the final products. Because version 1 has a much higher proportion of white lead I theorize that it would be more effective at preventing sunburn than version 2, whereas the second would be more effective as an ointment after getting sunburned due to the higher proportion of mastic and frankincense which are anti-inflammatory. Converted into ounces, they compare thusly:

Version 1

1oz lily

Version 2

lily

2oz white lead	1/24oz white lead
1/16oz mastic	1oz mastic
1/16oz frankincense	1oz frankincense
1/8oz camphor	1/24oz camphor
1oz animal fat	pork grease
Rose water	Rose water

INGREDIENTS

Lilly root: I used culinary lily root that I purchased from the Asian grocery. Many lily varieties are native to the Mediterranean and were easily accessible.



Woodcut and explanatory verse: entry on *moluo* (lily root) from *Ru cao bian* (On the Consumption of Herbs), published 1582 (Wanli reign period of the Ming Dynasty).

Dioscorides

“The leaves are applied to help those bitten by snakes. Boiled, they are good for burns, and preserved in vinegar they are good for wounds. The juice from the leaves (mixed with vinegar or honey and boiled in a brass jar) is a liquid medicine for old ulcers and new wounds. The root (roasted and pounded into small pieces with *rosaceum*) cures and soothes the womb, expels the menstrual flow, and heals ulcers, making a new skin.”

White lead:

“The lead-based white pigment, lead white, is usually referred to as a mixture of two main lead carbonates, hydrocerussite ($(\text{PbCO}_3)_2 \cdot \text{Pb}(\text{OH})_2$) and cerussite (PbCO_3). Lead white has been a famous material for make-up use since antiquity (Gliozzo and Ionescu, [2021](#)) and one of the most important, employed and valued white pigments in paintings and murals, with early reports in Egyptian cartonnage from the Graeco-Roman Period (Scott et al., [2003](#)), and used in painting workshops on Fayum portraits as early as the second century CE (Salvant et al., [2018](#))... The earliest method to obtain lead white was simply mining natural cerussite during the 5th–2nd millennium BCE in southern Europe.”

Dioscorides

“Mixed with stiff ointments, plasters called *lipara*, and with lozenges [tablets, but not to take internally] it is cooling, pore-closing, softening, filling, reduces the intensity of symptoms; and furthermore gently represses abnormal growths, and forms new skins; it is among those things which taken internally kill.”

This would provide a physical barrier to UV radiation but it is toxic. I substitute zinc oxide which has similar properties without being toxic. Post-period, artists substituted zinc oxide for White lead in paints. (10)

Mastic: the resin of the *Pistacia lentiscus* plant native to the Mediterranean, especially common in Greece and Turkey.

Dioscorides

“It is mixed with tooth powders and ointments for the face making it clearer. It prevents the eyelashes from falling out and thickens them, and when chewed it causes sweet breath and strengthens the gums.”

“...the existing data suggest that Chios mastic [mastic grown on the island of Chios in the Aegean Sea] possesses anti-inflammatory and anti-oxidative properties which could be utilized in the treatment of multiple disorders. Given the emerging antimicrobial resistance trends, the establishment of mastic’s antibacterial efficacy could support its introduction as adjunct therapy in the management of various infectious diseases... Another point that should be underlined is that, to date, no significant adverse effects associated with human consumption of mastic have been reported.”

Frankincense: resin of several species of Boswellia plant native to the Arabian Peninsula, the Horn of Africa, and South Asia

Dioscorides

“It is able to warm and is an astringent to clean away things which darken the pupils, fill up the hollowness of ulcers and draw them to a scar, and to glue together bloody wounds... It cures ulcerous burns from fire and chilblains rubbed on with fat from a pig or goose.”

Frankincense has been shown in modern studies to be anti-microbial and anti-inflammatory which would both be protective and soothing to sunburn.

Camphor: a compound distilled from the wood and bark of several tree species. The Camphora officinarum tree, native to China, Korea, and Japan, has the highest concentration of camphor but it is also found in several other species including wormwood.

“Camphor exhibits several biological properties such as antimicrobial, antiviral and antitussive effects. Camphor is a common ingredient in modern medicine in topically applied analgesics and rubefacients for treatment of minor muscle aches and pains and it is reported that camphor has been used to relieve pain caused by breast engorgement by intramuscular injections. It has been applied as a topical anti-infective and anti-pruritic and internally as a stimulant and carminative. However, camphor is poisonous when ingested and can cause seizures, confusion, irritability and neuromuscular hyperactivity.”

Animal fat: I used commercially available pork lard. Fats are a good carrier for other ingredients and are moisturizing. Dioscorides recommends using animal fat in a number of ointment recipes. He says to melt it and skim off the particulate three times, then seal it in a jar for future use.

“All fat is warming, softening and purifying... Swines’ fat is applied for disorders of the womb and perineum, and is also good for those burnt by fire... The same (applied with ash or chalk) is good for oedema, inflammation and fistulas [ulcers]. They say that ass's fat makes scars all one colour. Fats of geese and poultry are good for women’s disorders, cracks of the lips, clearing the face, and for sores of the ears.”

Rose water: I used petals from *Rosa nutkana* that I grew as that is the oldest rose variety I had access to.

Dioscorides

“It is astringent and cooling, good for cleaning and mixing with poultices. Taken as a drink it loosens the bowels and cools a heated stomach. It fills up hollow boils, and makes soothing medications for malignancies. It is a rub for penetrative ulcers, catarrh in the head, and heated eruptions; and a lotion for headache as well as a mouth rinse for the start of a toothache... The juice must be pressed out of them whilst they are still young, first cutting off that which is called the nail (which is the white that is in the petal), and the rest must be pounded and pounded in the shade in a mortar until it becomes thick, and then put in jars for eye salves or

suppositories... They are put in compositions called *antherae* [medicines extracted from flowers] and in wound Antidotes.”

PROCESS

Pounding the boiled lily root



Pouring in the liquified lard



Mixing the zinc oxide with rose water to form a paste



Grinding the frankincense and mastic



Mixing



Final results

Version 1



Version 2



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