

Psychoactive Substances

GE1328 BMS CityU 2015

Part 3:

Americas and Africa

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Mescal bean

Sophora secundiflora (Fabaceae)

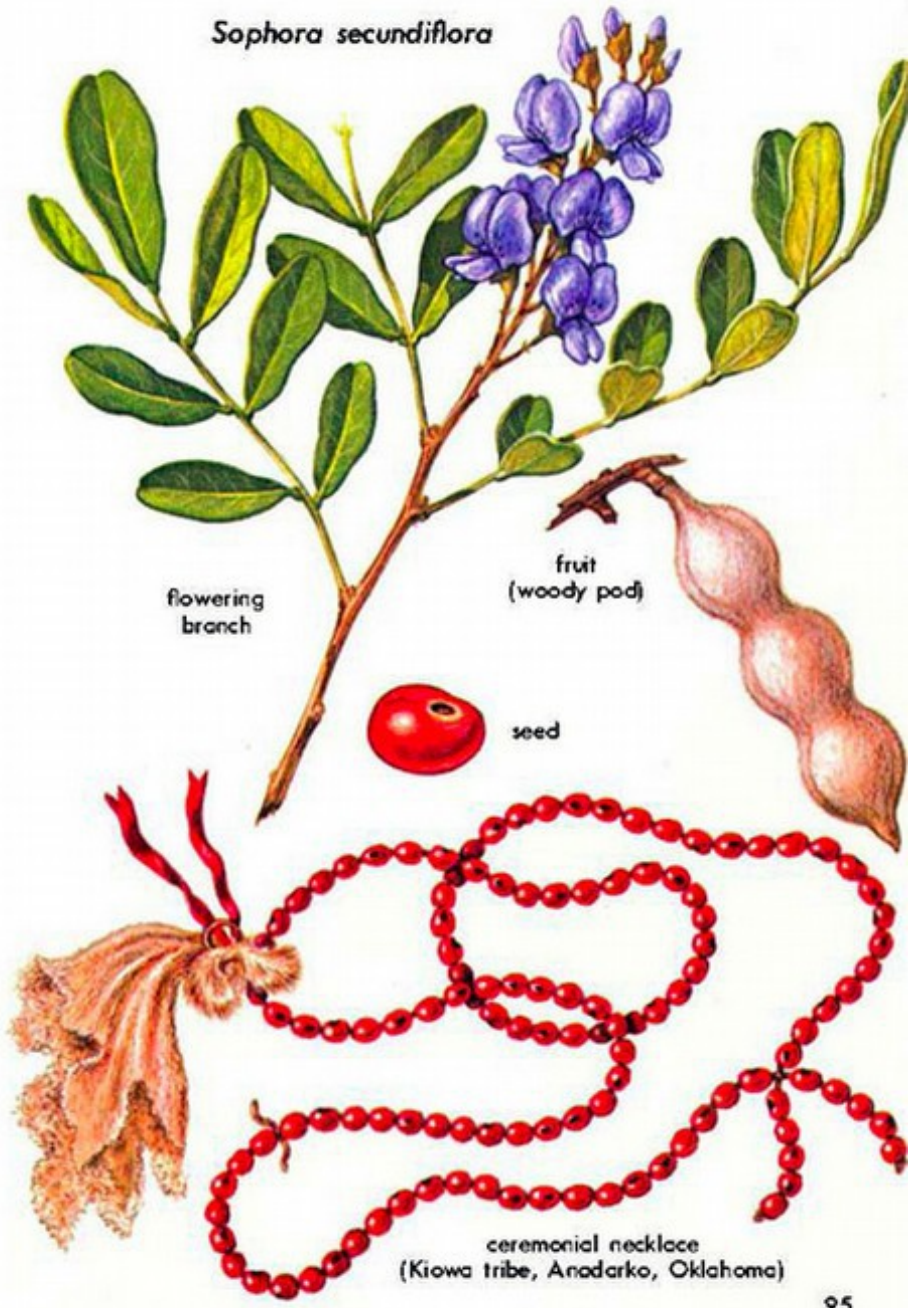
- The seeds of *Sophora secundiflora* have been used by the American Indians of the Southwestern U.S. as a hallucinogenic drug.
- They are also very toxic.



Mescal bean, *Sophora secundiflora*, Fabaceae



Sophora secundiflora



flowering branch

fruit (woody pod)

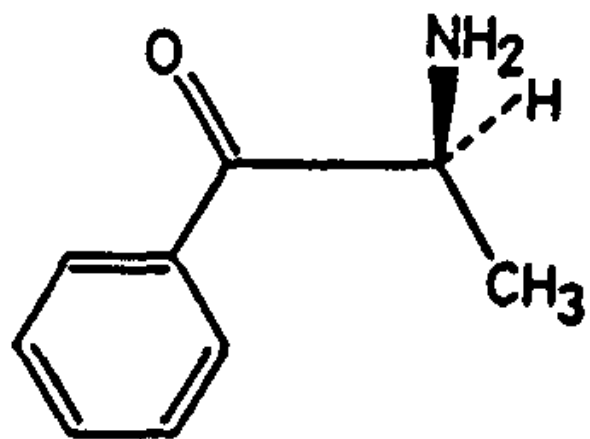
seed

ceremonial necklace (Kiowa tribe, Anadarko, Oklahoma)

Khat, *Catha edulis*, Celastraceae

- The leaves of khat (kat, qat) have been used for many years in the Arabian peninsula. The leaves are chewed daily by many, and the plant is a major export of Ethiopia to Yemen and a number of nearby countries. Khat is banned in Saudi Arabia.
- Lime is frequently added to hydrolyze the alkaloids and convert them to the free bases. The plant is probably native to Africa.





(18)
cathinone



Khat Is NOT That Safe!

Khat

Catha edulis

The leaves of the khat plant are chewed for their amphetamine-like stimulant effects. The active ingredients of khat are cathinone and cathine, which produce psychotropic, euphoric, metabolic and cardiovascular effects. The World Health Organization classified it as a drug of abuse.



Khat is sold in twig-like bunches. The stimulating effects of the leaves begin to fade within 48 hours.

Khat is a leafy green shrub that can grow into the size of a tree.



Health effects:

Sleeplessness
Nervousness
Irritability, feelings of anger and violent outbursts
Migraine

Inflammation of the mouth and the oral cavity, Oral cancer.

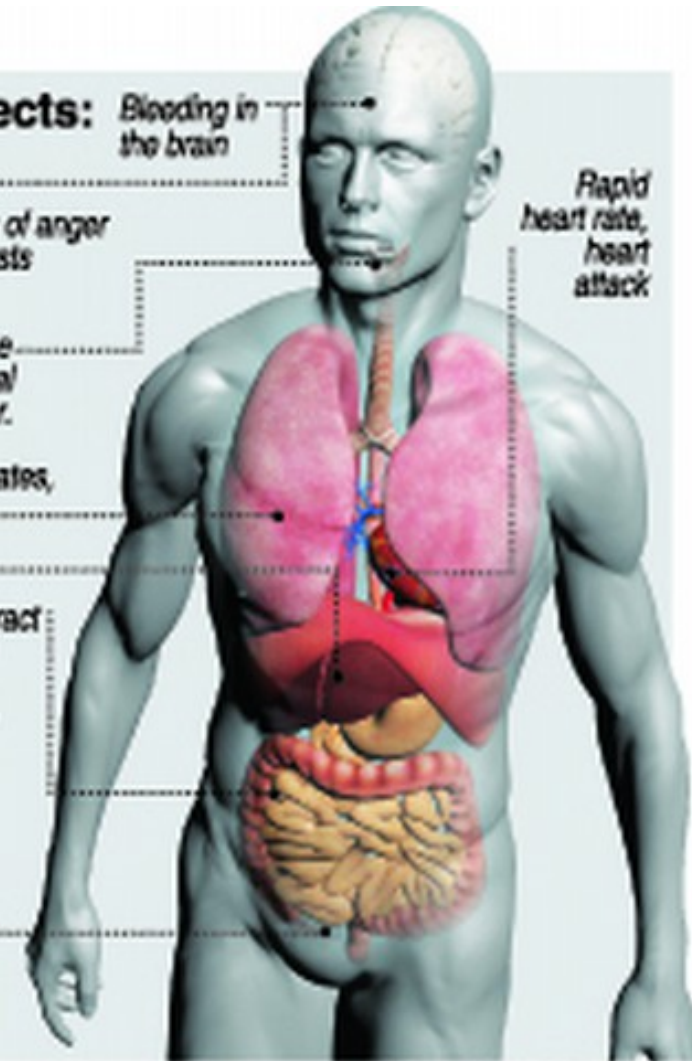
Faster breathing rates, lung problems

Liver damage

Gastro-intestinal tract problems such as constipation
Reduced appetite

Decreasing sexual desire, impotence, Male infertility

Reduced birth weight in babies and inhibited lactation in khat-chewing mothers



ST Graphic: Nalin Balasuriya

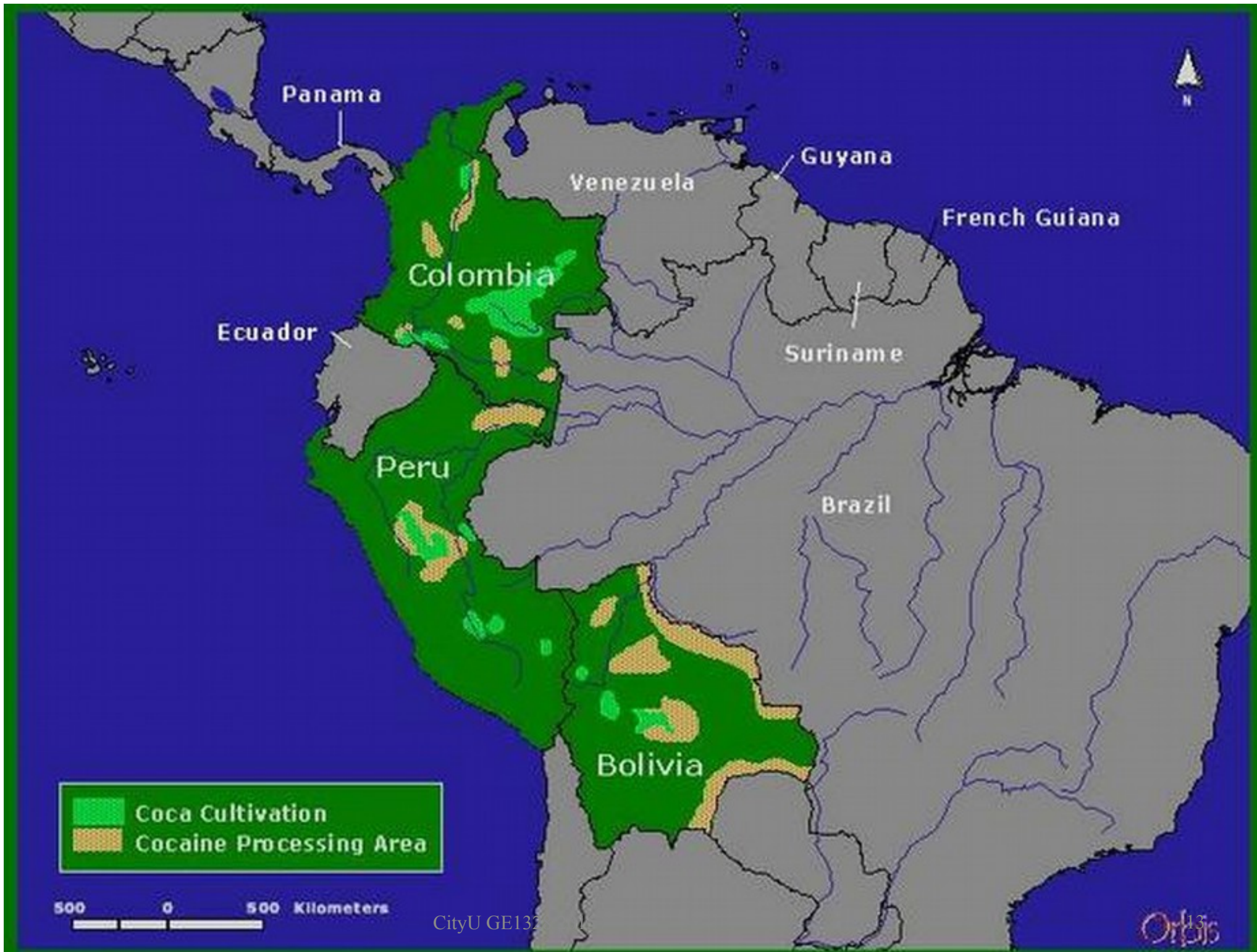
Coca, *Erythroxylum coca*, Erythroxylaceae

- The leaves of coca have been chewed for thousands of years by Indians of Andean South America.
- The Spanish tried to prohibit coca until they realized that the Indians worked harder with it.

Coca, *Erythroxylum coca*, Erythroxylaceae

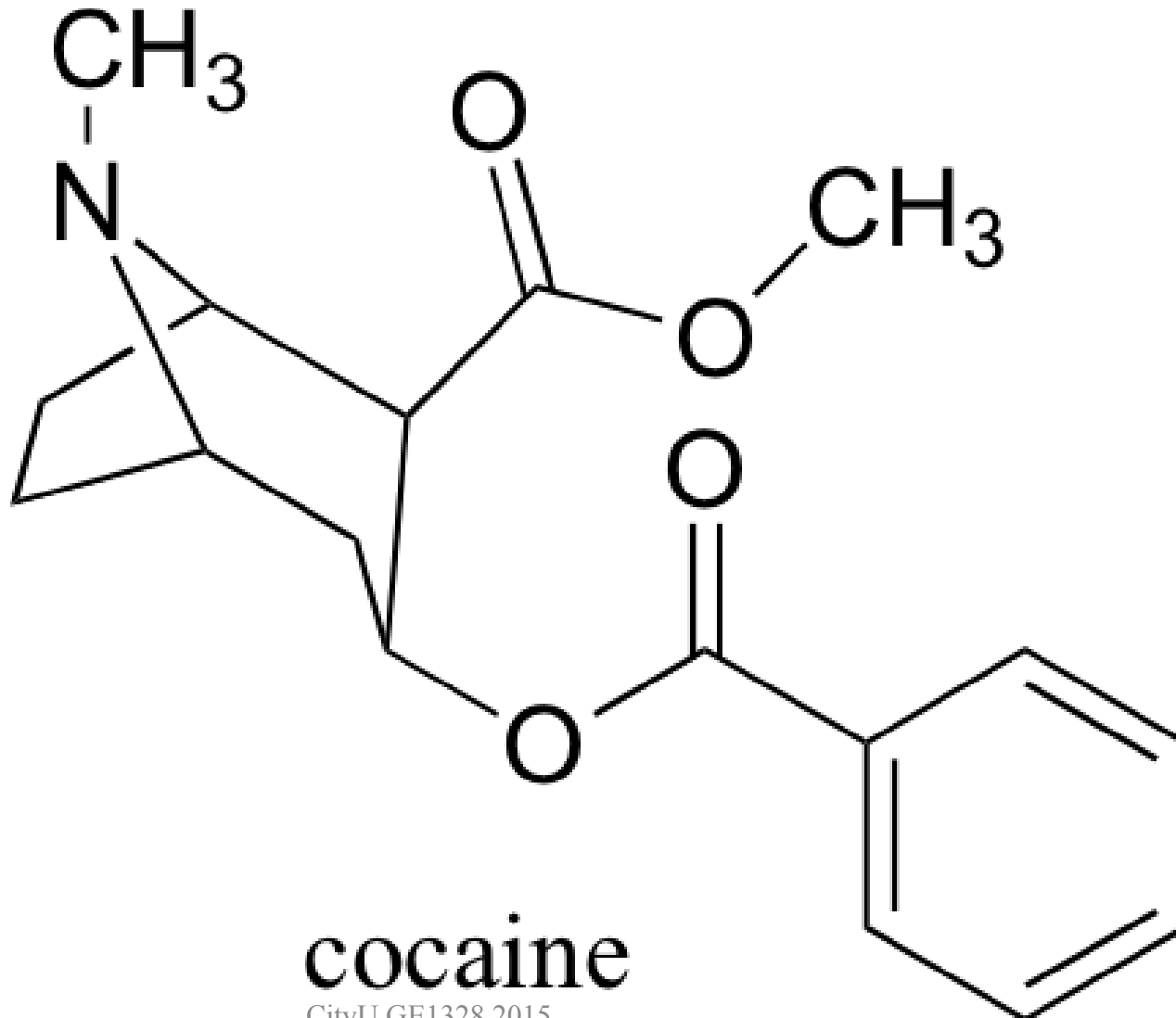


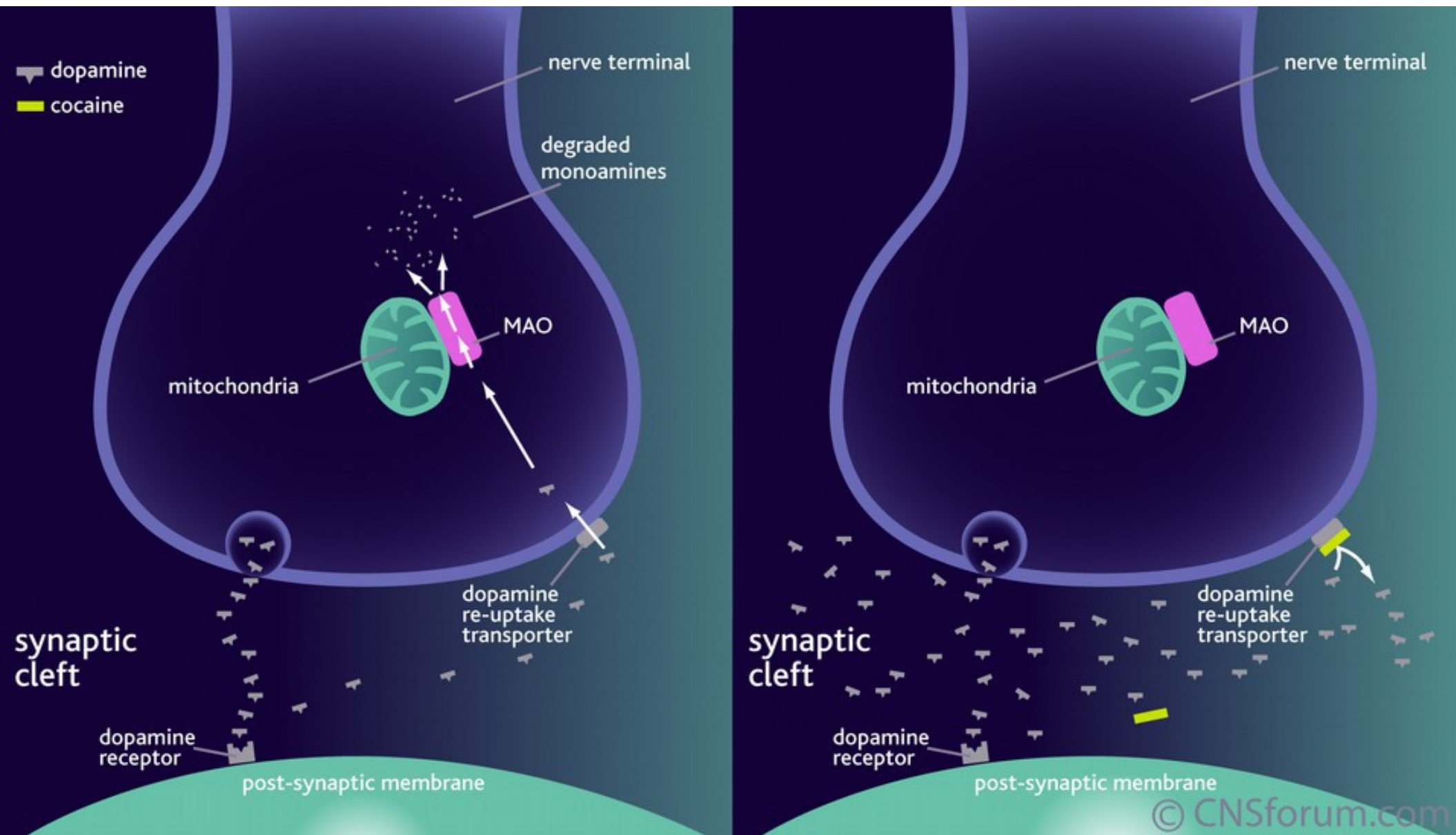




- In this case also, the Indians add lime to the leaves before chewing them.
- Cocaine blocks re-adsorption of norepinephrine in the brain. This makes the user feel invigorated and blocks feelings of fatigue and hunger.

Chemical Structure of Cocaine





- The leaf form of coca never became popular abroad.
- In 1860, cocaine was isolated and became popular. It became used as a local anesthetic.
- An extract of coca leaves became used in Coca Cola. Later the FDA made the company remove coca alkaloids from the extract.
- As a drug of abuse, cocaine may be sniffed, smoked or injected.

Excellent Pain-Killer!



COCAINE
TOOTHACHE DROPS
Instantaneous Cure!
PRICE 15 CENTS.
Prepared by the
LLOYD MANUFACTURING CO.
219 HUDSON AVE., ALBANY, N. Y.
For sale by all Druggists.
(Registered March 1885.) See other side.

Main physiological effects of Crack cocaine

Systemic:

- Increased temperature

Pupils:

- Dilation

Sense of balance:

- Vertigo

Blood vessels:

- Constriction
- Increased blood pressure

Heart:

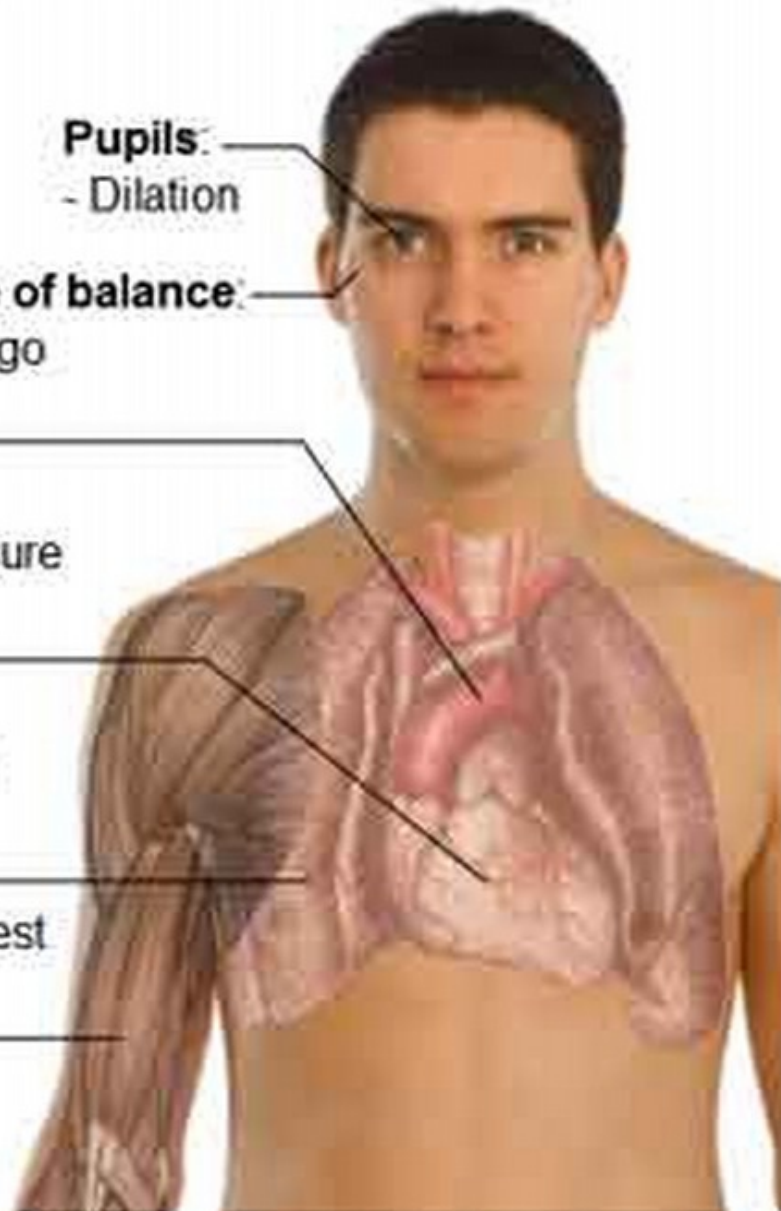
- Increased heart rate
- Risk of cardiac arrest

Lungs:

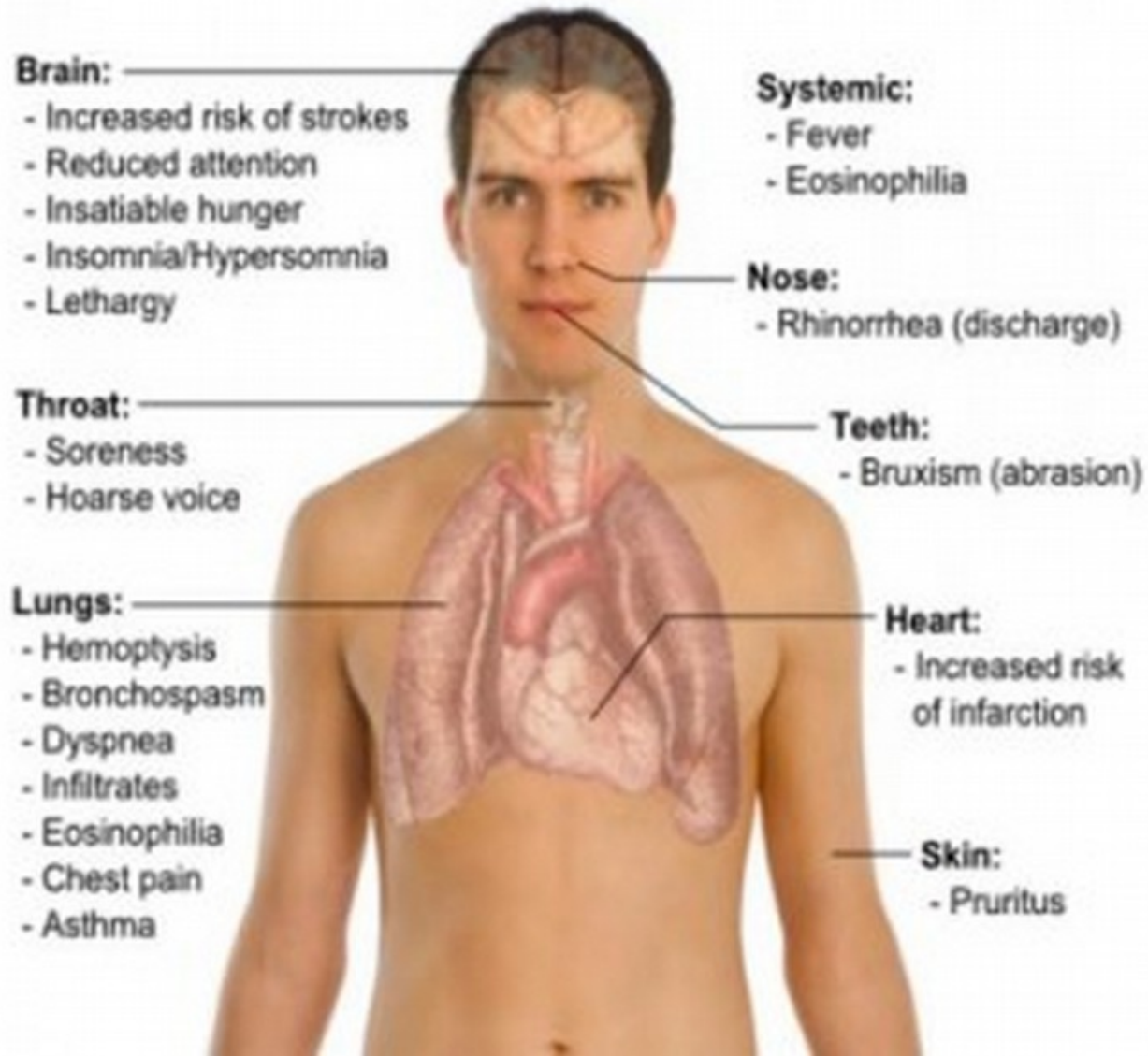
- Risk of respiratory arrest

Muscles:

- Tremor
- Twitches



Side effects of chronic use of Cocaine



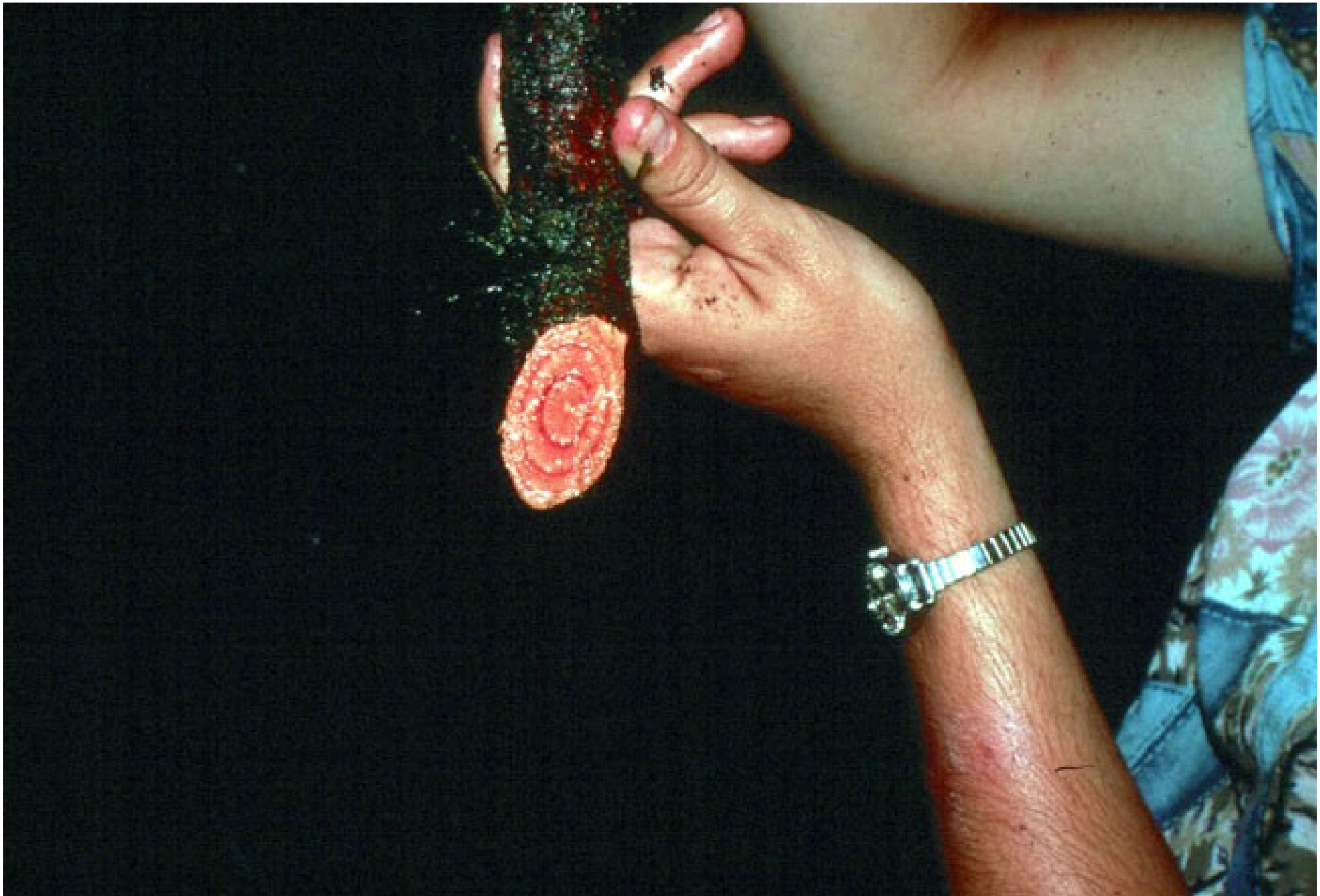
Yagé or ayahuasca, *Banisteriopsis* spp., Malpighiaceae

- Yagé or ayahuasca, the resinous exudate of the stems of *Banisteriopsis* spp. is usually made into a drink known as yagé or ayahuasca. *B. caapi* is one of the most commonly used species and is common in Colombia and Ecuador. The active compounds are harmine and other related alkaloids. Other plants are sometimes added as synergists, i.e., to enhance the activity.

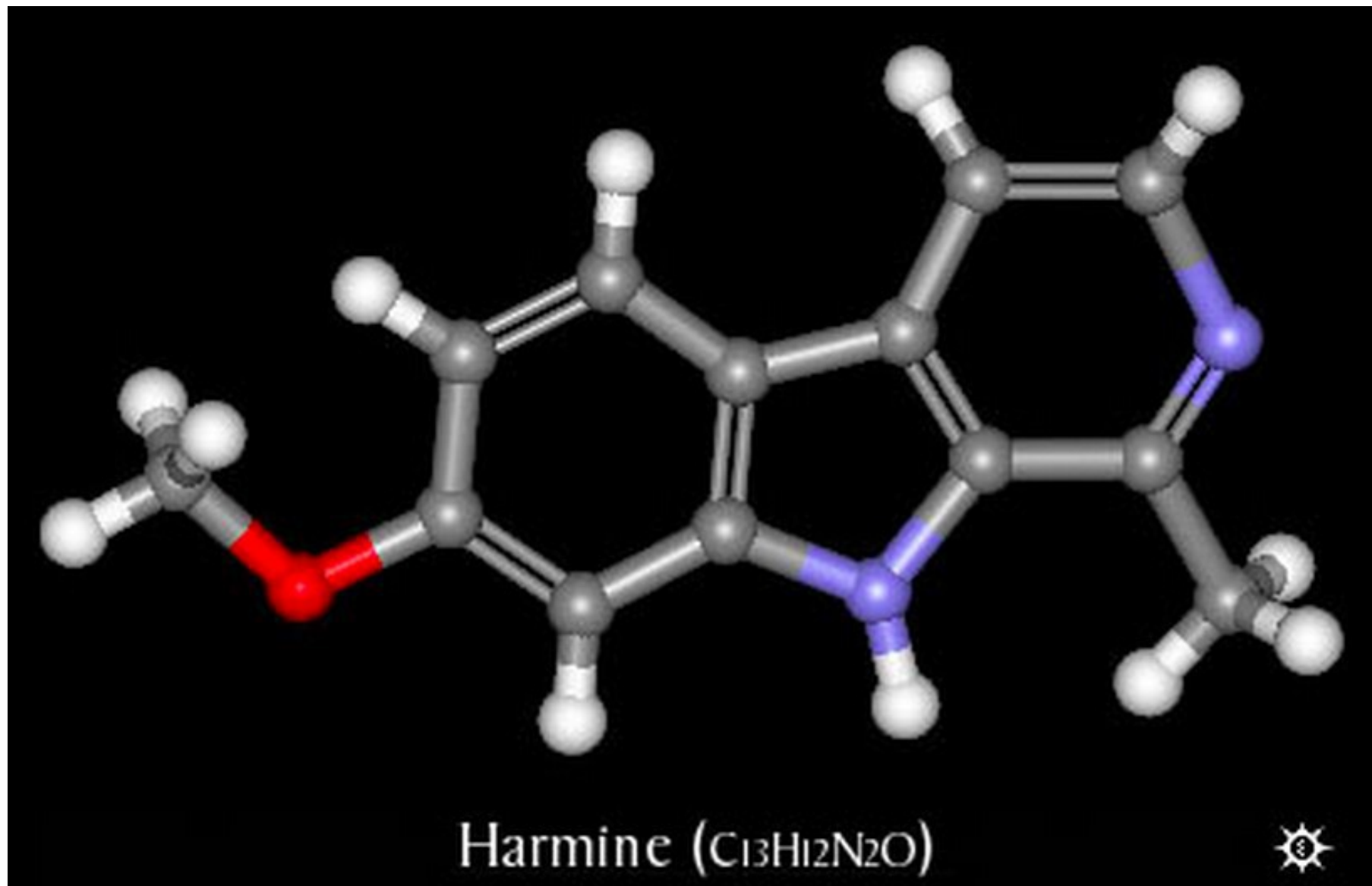


**Yagé, *Banisteriopsis caapi*,
Malpighiaceae**





Chemical Structure of Harmine



Painting on/after Atahuasca



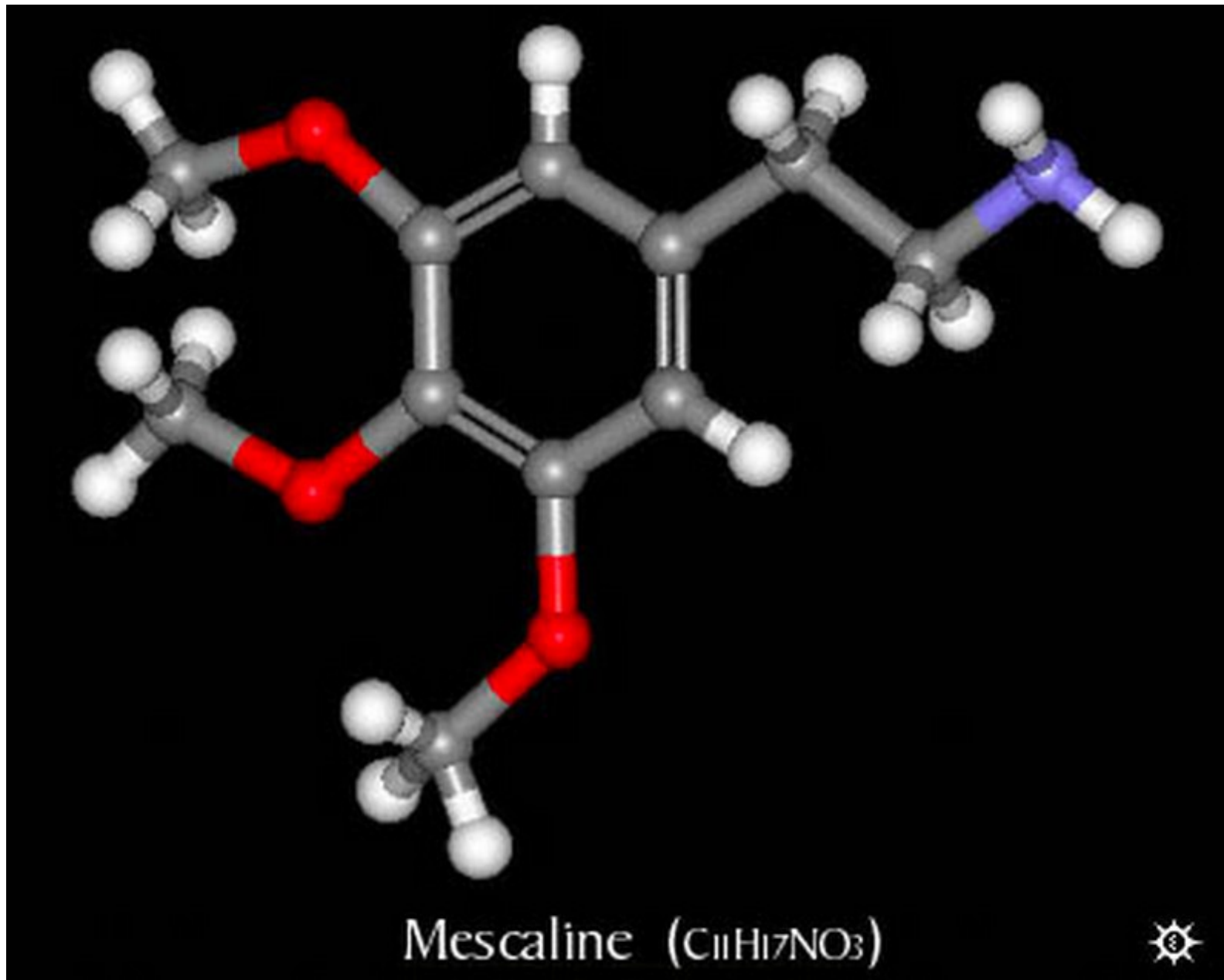
Psychoactive compounds from cacti

- A number of species of cacti from the New World are known to be hallucinogenic. Among these are peyote or mescal, *Lophophora williamsii* and *Trichocereus pachanoi*. The former is from Mexico and the latter from the Andes of South America. Mescaline is the most common alkaloid.



Peyote, *Lophophora williamsii*, Cactaceae





- The Spanish also tried to suppress the use of these. Many Indians in Mexico and in South America continued use of these plants, however.
- The Native American Church (chartered about 1920) began use of these in religious rites much later (about 1890).

Henri Michaux Mescaline Paintings





Bad Trip



Other hallucinogenic plants

- A snuff made from the powdered pods of *Anadananthera peregrina* (Fabaceae or Leguminosae) (yopo) has been used by Indians of the Caribbean and of northern South America. The snuff is often mixed with lime (calcium hydroxide).

*Anadenanthera
peregrina*



buds

flower heads

single
flower,
enlarged

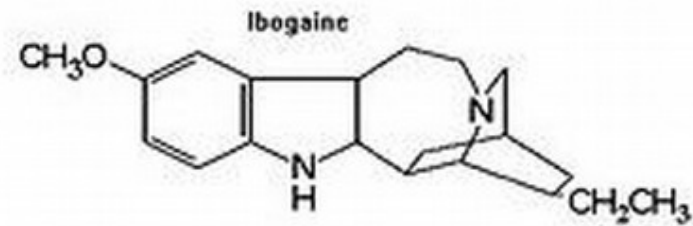
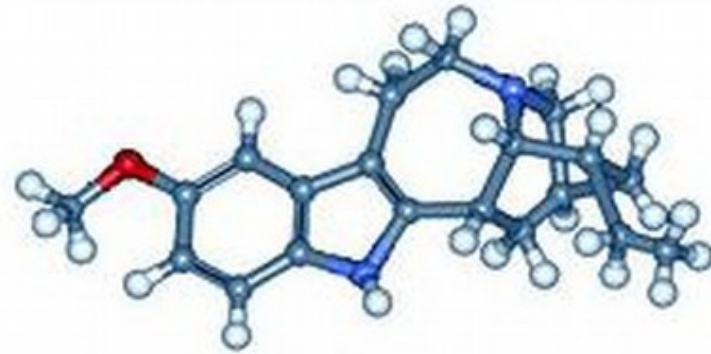
flowering
branch



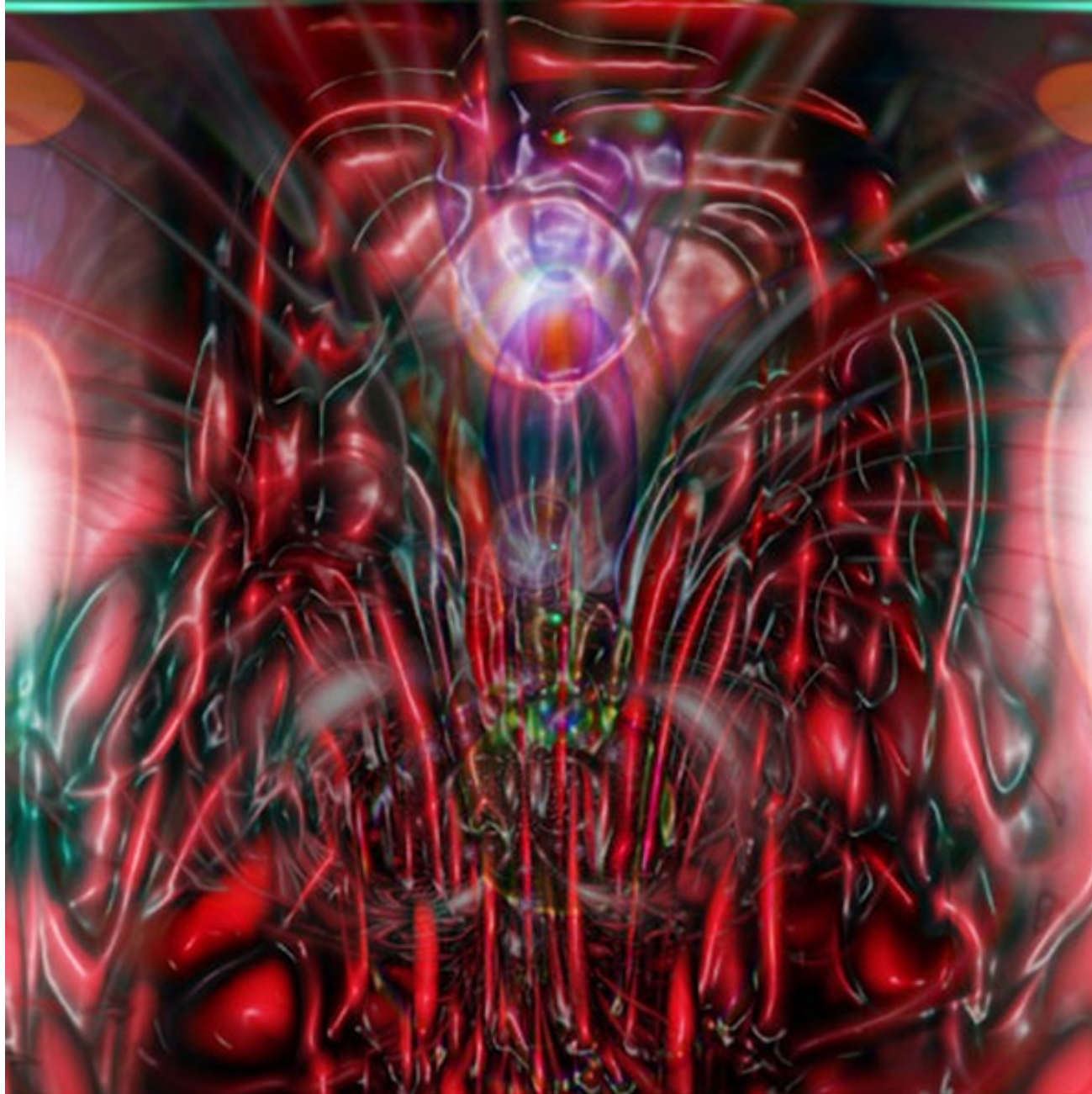
Iboga, *Tabernanthe iboga* (Apocynaceae)

- Iboga is reported to be used in Africa as a hallucinogen. In Gabon and the adjacent Congo, the plant is used in religious rites and in hunting game. There are also important medical uses for the plant. The active compounds are indole alkaloids.

Iboga & Ibogaine







Ibogaine Inspired Art



This image comes very close to the Ibogaine induced images I saw during my experience. Also the rising energy feel of this piece reminds me of the way the Ibogaine catapulted me into the cosmos, the light rising from the darkness. This probably reflects more of the Darker side of myself, where I was coming from during the "darkness" of my addiction... rising from the depths.

END OF PART THREE