# Plants that get you high!



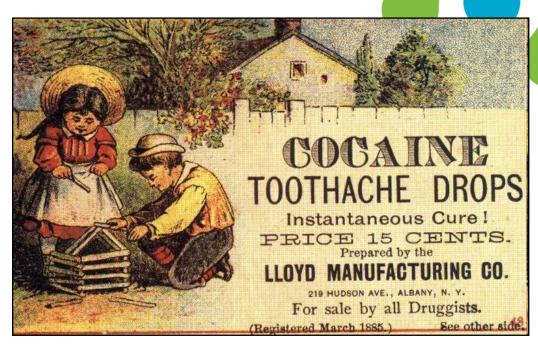


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# Substances which are currently seen as being harmful have not always been seen that way





Use of some became illegal after becoming seen as problematic (cocaine, opiates, cannabis)



#### Caffeine

#### 1,3,7-trimethylxanthine



- Caffeine occurs in >60 plant species
- How Caffeine Created the Modern World Michael Pollan
- Clearly a drug
  - Tolerance
  - Dependence
  - Withdrawal syndrome





#### **DMT** in Australia

- Acacia maideni 'Maiden's wattle'
- Pandandus paniculatus 'Screw Pine'
- Dubosia leichhardtii 'Corkwood tree'







#### **Government to ban common garden plants**

Kerry Smith, February 5, 2011 Issue 867 // Australia















Some species of Wattle may be included in the government ban.

New federal drug laws could make thousands of native and common garden plants illegal.

The proposed legislation will place common plants under schedule II of the drug code along with plants such as marijuana and opium poppies.

The most worrying aspect of the legislation is the sheer number of plant species that will be made illegal.

Many of the substances produced by the plants are already illegal to manufacture or consume. However, there is not any significant market for making drugs from these plants and they are not sold or produced by organised crime.

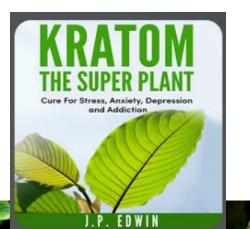


#### NEWS

Proposed legislation would make most gardens and farms illegal



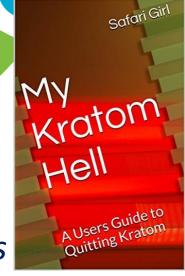




# Mitragyna speciosa



- 40 named alkaloids
- Mytraginine
  - Acts on opioid receptors
  - Relieves pain
  - Pleasurable
- ? Treatment for opioid abuse
- Illegal in Australia







Sethi, R., Hoang, N., Ravishankar, D. A., McCracken, M., & Manzardo, A. M. (2020). Kratom (Mitragyna speciosa): friend or foe?. *The Primary Care Companion for CNS Healthy Communities Disorders*, 22(1), 27410.

#### Khat – Cathus edulis



- East Africa & Arabia
- Contain cathinones
  - Natural stimulant
  - Euphoria, excitation
  - ↓ appetite
  - Tanxiety
- Illegal in Australia



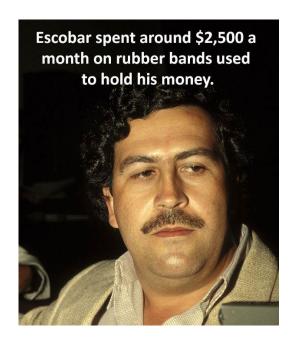




# Cocaine Erythroxylum coca



- Widespread in South America
- World wide trade
- The UN guesses that there are 17.1 million cocaine users, supporting a global market of \$88 billion.
- Illegal in Australia





# Australian 'cocaine' plant



- Erythroxylacae autrale
  - The leaves contain 0.8% meteloidine, an alkaloid similar to cocaine.
  - The roots contain dihydroxytropacocaine and methylecgonidine
  - All Erythroxylum trees are banned in New South Wales despite this species being native in New South Wales.









# Angel's trumpet Brugmansia sp.



- Woody shrub small tree
- All parts of the plant contain scopolamine and hyoscine
- Hallucinogenic
  - 'terrifying' rather than pleasant
- Widely available garden ornamental



#### Salvia divinorum

- Related to mint
- Brewed as a tea
- Active at the opioid receptor
- Unique psychedelic
- All Salvia divinorum products are prohibited plant

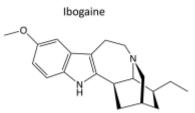




# IBOGAINE: AFRICAN DRUG THAT CURES OPIOID ADDICTION



- African herb
- Affects many neurotransmitters
  - SSRI
  - Opioid agonist
  - Mild stimulant





- Profound psychedelic in large doses
- Grows in NSW & Queensland



# Australian psilocybin

- Mushrooms
  - Various species have psilocybin
    - Psilocybe subaeruginosa
    - Panaeolus cyanescens
    - Psilocybe semilanceata











# Water Lily (Nymphaea caerulea)

- Blue Water Lily
  - Apomorphine
  - Nuciferine
  - Flavinoids





Oosthuizen, C. B., Fisher, M., & Lall, N. (2020). Nymphaea caerulea. In *Underexplored Medicinal Plants from Sub-Saharan Africa* (pp. 205-210). Academic Press.

Schimpf, M., Ulmer, T., Hiller, H., & Barbuto, A. F. (2021). Toxicity From Blue Lotus (Nymphaea caerulea) After Ingestion or Inhalation: A Case Series. Military Medicine.



## Pituri (Duboisia hopwoodii)

#### Traditional Aboriginal stimulant and analgesic



 "We observed that some, tho few, held constantly in their mouths, the leaves of an herb which they chewd as a European does tobacco or an East Indian Betele. What sort of plant it was, we had not an opportunity of learning..." Joseph Banks 1770

Alkaloid	$\frac{7}{6}$ lotal alkaloid				
	Northern Territory		Western Australia		
	Roots	Leaves	Roots	Leaves	
Nornicotine	17.7	86.2	47.8	20.2	
Nicotine	19.1	8.8	tr	77.1	
N-Formylnornicotine	tr	1.1	3.8	tr	
Myosmine		1.4	7.8	tr	
Hyoscyamine	55.6		40.7	1.9	La a IAIa
Hyoscine	6.0				Health

9/ Tatal alkalaid

### There's more



- Plants
  - Cannabinoids
  - Tobacco
  - Opium poppy
  - Kava
  - Cacti (mescaline)

#### Animals

- Toads (bufotenine, DMT)
- Hallucinogenic fish
- Sea sponges (DMT)



Plants people smoke

Althaea officinalis ~ "Marshmallow"

Amaranthus dubius

Arctostaphylos uva-ursi ~ "Bearberry"

Argemone mexicana

Arnica

Artemisia vulgaris ~ "Mugwort"

Asteraceae species ~ "Chamomile"

Cabbage ~ Brassica Oleracea

Calea zacatechichi

Calendula

Canavalia maritima ~ "Baybean"

Cannabis THC and CBD

Cecropia mexicana ~ "Guamura"

Cestrum nocturnum ~ "Hasana"

Cynoglossum virginianum L. ~ "Wild comfrey"

Cytisus scoparius

Damiana<sup>[2]</sup>

Entada rheedii

Eschscholzia californica ~ "California Poppy"

Fittonia albivenis

Hippobroma longiflora

Humulus japonica ~ "Japanese Hops"

Lavandula species ~ "Lavender"

Lactuca virosa ~ "Lettuce Opium"

Laggera alata ~ "?"

Lamiaceae species ~ "Mint"

Leonotis leonurus ~ "Lion's tail"

Leonurus cardiaca ~ "Motherwort"

Leonurus sibiricus ~ "Honey weed"

Lobelia cardinalis

Lobelia inflata ~ "Indian-tobacco"

Lobelia inflata

Lobelia siphilitica

Nepeta cataria ~ "Catnip"

Nicotiana species ~ "Tobacco"

Nymphaea alba ~ "White Lily"

Nymphaea caerulea ~ "Blue Lily"

Opium poppy

Origanum majorana ~ "Marjoram"

Origanum vulgare ~ "Oregano"

Passiflora incarnata ~ "Passionflower"

Pedicularis densiflora ~ "Indian Warrior"

Pedicularis groenlandica ~ "Elephant's Head"

Rubus occidentalis

Salvia divinorum

Salvia dorrii ~ "Tobacco Sage"

Salvia species ~ "Sage", etc.

Scutellaria galericulata

Scutellaria lateriflora

Scutellaria nana

Scutellaria species ~ "Skullcap"

Sida acuta ~ "Wireweed"

Sida rhombifolia ~ "Wireweed"

Silene capensis

Syzygium aromaticum - "Clove"

Tagetes lucida "Mexican Tarragon" [5]

Tarchonanthus camphoratus ~ "???"

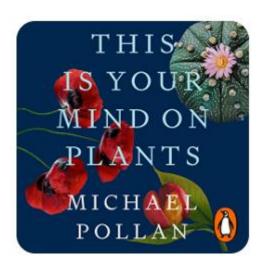
Turnera diffusa ~ "Damiana"

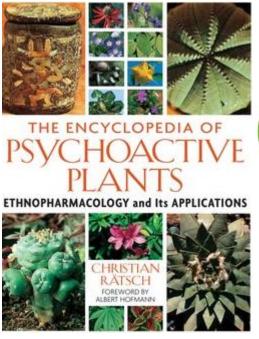
Tussilago farfara ~ "Coltsfoot"

Verbascum species ~ "Mullein"

Zornia latifolia ~ "Maconha Brava"









# Thank you

