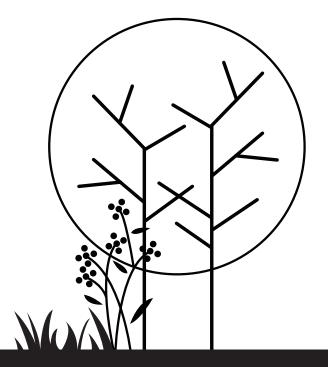
# park as pharmacy medicinal botany in cities



### introduction

Hello!

Thanks for picking up the Park as Pharmacy field guide. This is the first step in preparing for staying alive in our future city, whether it involves a zombie apocalypse or the collapse of the natural world or a bit of both. Your survival will depend on your ability to make the most of what you have in the environment. Fortunately, what you have available is plenty even in the current urban conditions.

There are many, many species of wild urban plants commonly observed in New York City. This book will help you identify 22 of the most common and most useful plant species in your struggle to survive. The focus is on their usage as medicine, though there is much overlap in their value as nutritious food.



The biological resilience of these species in the urban ecosystem is due to the similarity between the city's built environment and their native habitats of rock outcrops and grasslands, as well as their production of secondary plant compounds that effectively defend against herbivores and help in competing against other plants. These secondary plant compounds are frequently the same chemicals that make them so useful as medicine. Non-native species, many brought here from overseas for medicinal, food, and ornamental uses, tend to be especially effective and resilient because they did not co-evolve naturally over long periods of time with native plants.

Keep in mind, the purpose of this guide is not to prescribe any treatments or diets, but to draw awareness to the overlooked properties of wild urban plants.

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\*organized by grouping species commonly observed together in Central Park

references & studies on uses of specific plant species

# symbology Classified as



External usage as a poultice, ointment, or oil



Classified as invasive species by Department of Conservation, poses a threat to biodiversity of local ecosystems

25-26



Internal usage as a tea, infusion, decoction, or steam



Contains sufficient quantities of potentially toxic compounds to pose danger to human health



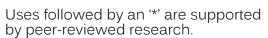
Internal consumption for nutritional, rather than medicinal, purpose



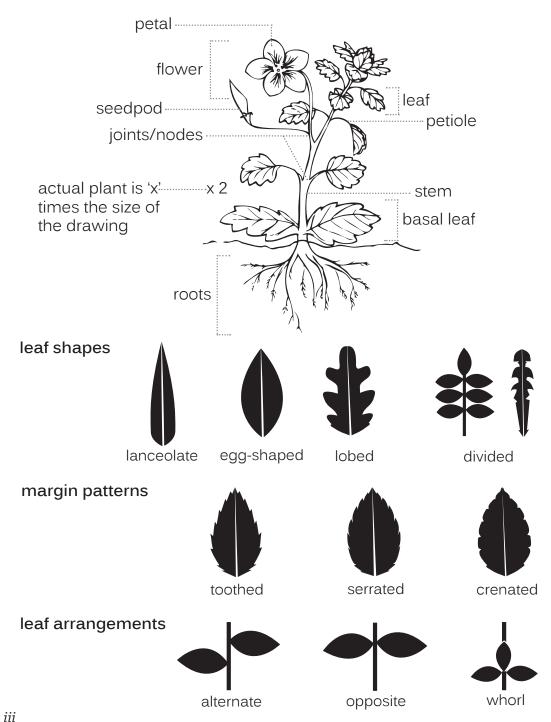
Used in traditional Chinese medicine



Sold as a product in stores & markets



### identification



**Mock Strawberry** 

Zhao L, Zhang SĹ, Tao JY, Jin F, Pang R, Guo YJ, Ye P, Dong JH, Zheng GH. 2008. "Anti-inflammatory mechanism of a folk herbal medicine, Duchesnea indica (Andr) Focke at RAW264.7 cell line." Immunol Invest. 37(4):339-57.

BO PENG, QIN HU, XINMIN LIU, 1 LIWEÌ WANG, QI CHANG, JIANRONG LI, JINTIAN TANG, NING WANG, AND YUQI WANG. 2009. "Duchesnea Phenolic Fraction Inhibits In Vitro and In Vivo Growth of Cervical Cancer Through Induction of Apoptosis and Cell Cycle Arrest" Experimental Biology and Medicine 234:74-83.

#### Muawort

Adams, James David, Cecilia Garcia, and Garima Garg. 2012. "Mugwort (Artemisia vulgaris, Artemisia douglasiana, Artemisia argyi) in the Treatment of Menopause, Premenstrual Syndrome, Dysmenorrhea and Attention Deficit Hyperactivity Disorder." Chinese Medicine (2151-1918) 3, no. 3: 116-123.

#### Plantain

Ralph Gruppi Thome', He' lio Batista dos Santos, Fa' bio Vieira dos Santos, Renato Jose' da Silva Oliveira, Luis Fernando de Camargos2, Mariana Nunes Pereira, Tamara Ribeiro Longatti, Ca' ssio Martins Souto, Carlaile Soares Franco, Raissa de Oliveira Aquino Schu' ffner and Rosy Iara Maciel Azambuja Ribeiro. 2008. "Evaluation of healing wound and genotoxicity potentials from extracts hydroalcoholic of Plantago major and Siparuna guianensis." Experimental Biology and Medicine 2012; 237: 1379–1386.

#### **Prostrate Knotweed**

Sohn SH, Lee EY, Lee JH, Kim Y, Shin M, Hong M, Bae H. 2009. "Screening of herbal medicines for recovery of acetaminophen-induced nephrotoxicity." Environ Toxicol Pharmacol. 27(2):225-30.

Hsu CY. 2006. "Antioxidant activity of extract from Polygonum aviculare L." Biol Res. 39(2):281-8.

#### Purslane

Uddin, Md. Kamal; Juraimi, Abdul Shukor; Ali, Md. Eaqub; Ismail, Mohd Razi. 2012. "Evaluation of Antioxidant Properties and Mineral Composition of Purslane (Portulaca oleracea L.) at Different Growth Stages." Int. J. Mol. Sci. 13, no. 8: 10257-10267.

#### Red Clover

Markus Lipovac, Peter Chedraui, Christine Gruenhut, Anca Gocan, Christine Kurz, Benedikt

Neuber & Martin Imhof. 2012. "The effect of red clover isoflavone supplementation over vasomotor and menopausal symptoms in postmenopausal women." Gynecological Endocrinology, 28(3): 203–207.

#### St. John's Wort

Cervo, Luigi, Marco Rozio, C. Ekalle-Soppo, Giovanna Guiso, Paolo Morazzoni, and Silvio Caccia. 2002. "Role of Hyperforin in the Antidepressant-Like Activity of Hypericum Perforatum Extracts." Psychopharmacology 164 (4): 423-8.

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Meuninck, Jim. 2008. Medicinal Plants of North America. Falcon Guides: Guilford, CT.

Newcomb, Lawrence. 1977. Newcomb's Wildflower Guide. Little, Brown & Company: New York.

Nuan-Wu, Jian. 2005. An Illustrated Chinese Materia Medica. Oxford University Press: New York.

Reader's Digest. Magic & Medicine of Plants. Reader's Digest Association, Inc.: Pleasantville, NY.

Silverman, Maida. 1997. A City Herbal. Ash Tree Publishing.

USDA, NRCS. 2013. The PLANTS Database (http://plants.usda.gov, 16 March 2013). National Plant Data Team, Greensboro, NC 27401-4901 USA.

### studies

#### Burdock

Ana Beatriz Albino de Almeida, Marina Sánchez-Hidalgo, Antonio Ramón Martín, Anderson Luiz-Ferreira, José Roberto Trigo, Wagner Vilegas, Lourdes Campaner dos Santos, Alba Regina Monteiro Souza-Brito, Catalina Alarcón de la Lastra. 2013. "Anti-inflammatory intestinal activity of Arctium lappa L. (Asteraceae) in TNBS colitis model." Journal of Ethnopharmacology, Volume 146, 1: 300–310.

#### Dandelion

Dirleise Colle, Leticia Priscilla Arantes, Priscila Gubert, Sonia Cristina Almeida da Luz, Margareth Linde Athayde, Joa Batista Teixeira Rocha, and Fe'lix Alexandre Antunes Soares. 2012. "Antioxidant Properties of Taraxacum officinale Leaf Extract Are Involvedvin the Protective Effect Against Hepatoxicity Induced by Acetaminophen in Mice." JOURNAL OF MEDICINAL FOOD J Med Food 15, 6: 549–556.

#### **Evening Primrose**

Zaitone SA, Moustafa YM, Mosaad SM, El-Orabi NF. 2011.. "Effect of evening primrose oil and omega-3 polyunsaturated fatty acids on the cardiovascular risk of celecoxib in rats." J Cardiovasc Pharmacol. 58(1):72-9.

#### Goldenrod

Frank M Frey, Ryan Meyers. 2010. "Antibacterial activity of traditional medicinal plants used by Haudenosaunee peoples of New York State." BMC Complementary and Alternative Medicine 2010, 10:64.

#### Japanese Knotweed

Husam Ghanim, Chang Ling Sia, Sanaa Abuaysheh, Kelly Korzeniewski, Priyanka Patnaik, Anuritha Marumganti, Ajay Chaudhuri, and Paresh Dandona. 2010. "An Antiinflammatory and Reactive Oxygen Species Suppressive Effects of an Extract of Polygonum Cuspidatum Containing Resveratrol." J Clin Endocrinol Metab, 95(9):E1–E8.

### definitions

#### anti-bacterial (anti-biotic)

prevents bacterial growth and bacterial infections

#### anti-inflammatory

reduces the pain and inflammation associated with the body's response to damaged body tissues via injury, infection, etc.

#### anti-microbial (anti-septic)

prevents microbial infections by killing micro-organisms including bacteria, viruses, fungi, & parasites

#### anti-oxidant

reduces cell damage from oxidation activity of free radicals by serving as a reducing agent

#### astringent

reduces discharge of blood, mucus, oils, etc. by constricting body tissues

#### decoction

boiling plant material in water

#### diuretic

increases excretion of water from body through production of urine

#### extract

separating out desired plant compounds into concentrated dosages

#### poultice

applying crushed plant material directly to skin

#### purgative

increases excretion of wastes from body via stimulating organs, softening solids, and lubricating pathways

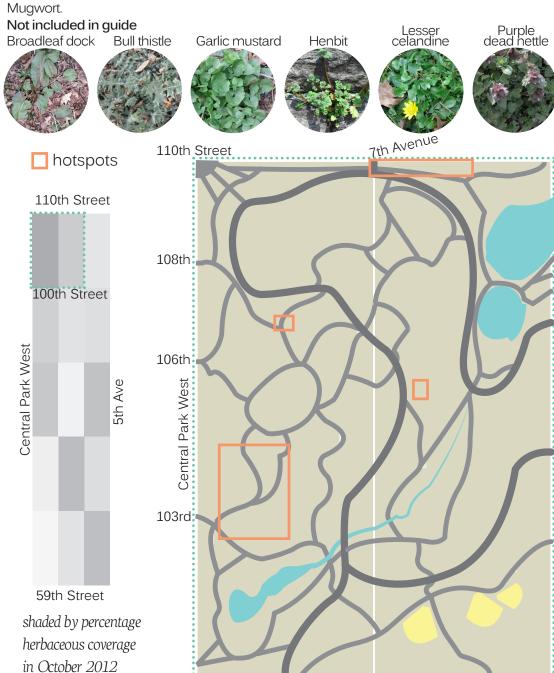
#### tea (infusion)

steeping plant material in hot water

# Herbs in Central Park Common species in March 2013

#### Included in guide

Chickweed, Clovers, Common Blue Violet, Dandelion, Evening Primrose, Mock Strawberry, Mugwort.



100th Street







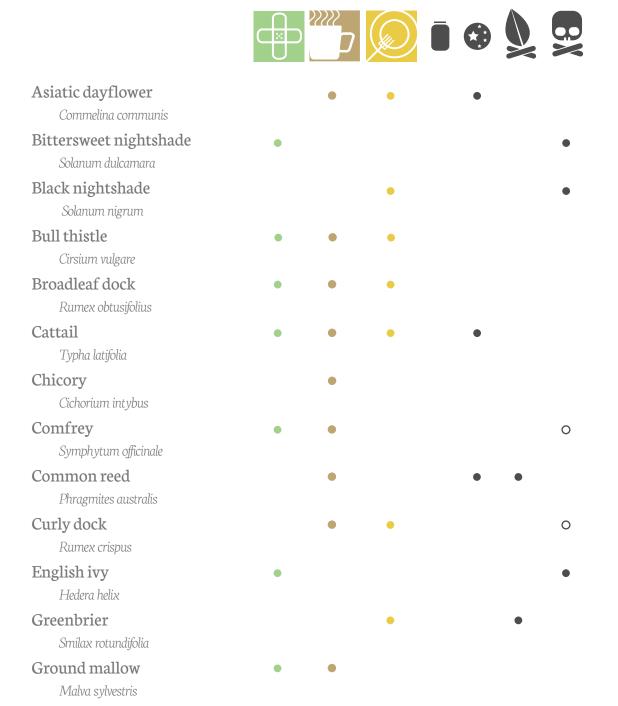






Henbit		•	•			
Lamium amplexicaule						
Horseweed	•		•	•		
Conyza canadensis						
Indian mallow	•	•				
Abutilon theophrasti						
Japanese honeysuckle		•	•	•	•	
Lonicera japonica						
Lesser celandine	•	•				
Ranunculus ficaria						
Mullein	•	•				
Verbascum thapsus						
Multiflora rose		•	•		•	
Rosa multiflora						
Pepperweeds		•	•		•	
Lepidium sp.						
Porcelain berry	•	•	•		•	
Ampelopsis brevipedunculata						
Pigweeds/Amaranths		•	•			
Amaranthus sp.						
Stinging Nettle		•	•			
Urtica dioica						
Wineberry			•		•	
Rubus phoenicolasius						
Woodsorrel		•	•			0
Oxalis sp.						

### more urban herbs



### stayin' alive

Can you survive for 2 days in post-apocalypse Central Park? Try to use this guide to deal with the following situations by collecting the appropriate plants! If you survive, you get to live. And maybe enjoy some new tastes!



Grrr - is that a bear or your stomach? Either way, best to find something yummy and filling!

ЗРМ

6ам



Ouch - hid in a patch of poison ivy. Better patch up before the rashes and swelling become too intense.

12<sub>AM</sub>



Cough, cough - could be a cold or bronchitis, but best to soothe your lungs & boost immunity ASAP.

OA1



Almost roasted & seasoned by zombie chefs - cover up your burns to smell less delectable and prevent infection!

ЗРМ



Burned out from running power back up with some vitamins & essential fatty acids.

Strengthen your digestive & metabolic organs against the pains of an irregular diet and questionable water sources!

 $12_{\text{AM}}$ 

23 vi

# mugwort 😂 👲 👳

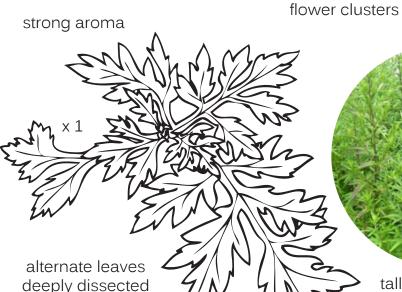






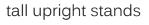
### Artemisia vulgaris

perennial disturbed, compacted soil with high pH











with sharp pointed lobes

diuretic, anti-inflammatory\*

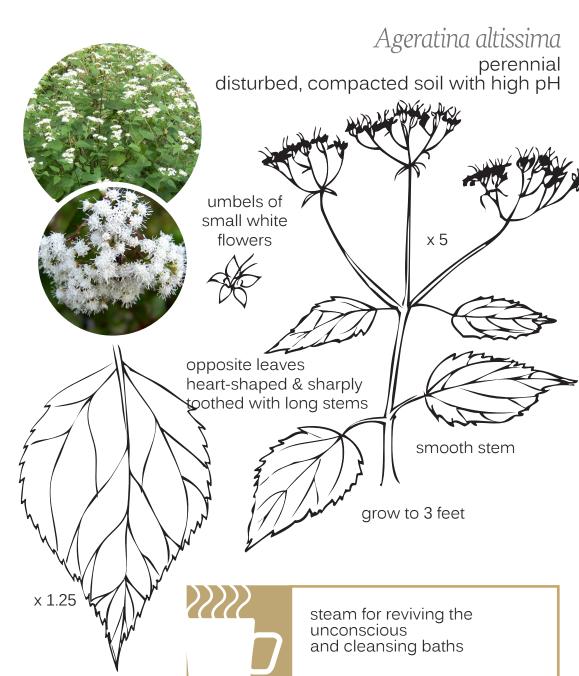
dried leaf burned in Chinese acupuncture "moxabustion"

leaf tea treats menstrual irregularity, colds, bronchitis. colic, epilepsy, fevers, and kidney ailments, sciatica

promotes appetite



# white snakeroot



### white heath aster

Symphyotrichum ericoides

perennial urban meadows, lots, rubble, roadsides





steam for reviving the unconscious and cleansing baths

### common chickweed

Stellaria media

winter annual lawns, rubble, stone walls, pavement cracks, roadsides, vacant lots



small white flowers with 5 deeply notched petals



cooling ointment for ulcers, rashes, insect bites, & inflammation

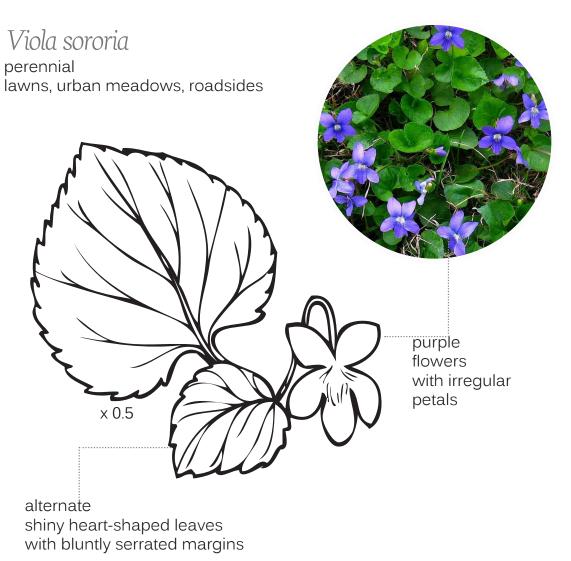
contains anti-oxidant ascorbic acid (form of vitamin C)

contains soothing mucilage

contains saponins that may aid absorption of nutrients

young stem & leaves (taste like baby spinach)

### common blue violet







Portulaca oleracea

summer annual vacant lots, waste areas, compacted lawns, pavement cracks

grow to 6" tall and 2 feet wide

opposite succulent leaves, paddle-shaped, glossy

bright yellow flowers ....5 petals open when sunny

prostrate red or green stems

ri

anti-inflammatory

rich source of omega-3 fatty acids, vitamins, minerals & antioxidants\*



tart leaves and stems

mucilage used for thickening soups & stews

# st. johnswort

### Hypericum perforatum

perennial

vacant lots, minimally maintained lawns and public parks, meadows,

stone walls, waste areas.

grow to 3-4 feet tall

opposite leaves, elliptical to oblong 1-1.5" long by 0.25-0.5" wide covered with translucent dots

clusters of yellow flowers, five petals 0.75 to 1" wide





flower & leaf tea for wounds



antimicrobial against influenza, herpes, retrovirus, polio, hepatitis C, gram-negative and gram-positive bacteria

anti-depressant\* may combat fatigue, relieve anxiety, improve sleep, support weight loss, and reduce pre-menstrual/menopausal symptoms

# ground ivy

asthma, bronchitis, and sore

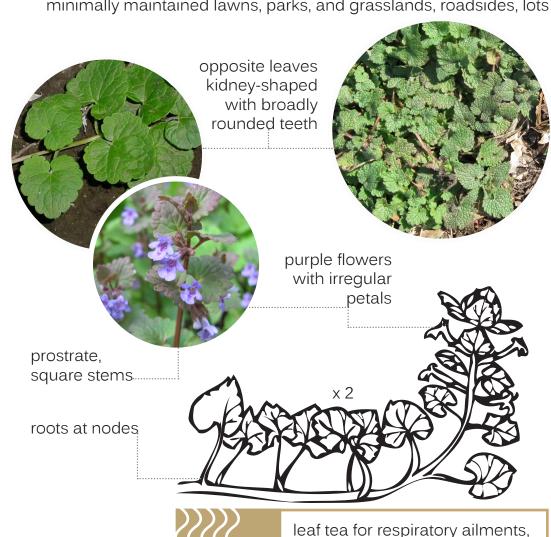
source of vitamin C

throats

Glechoma hederacea

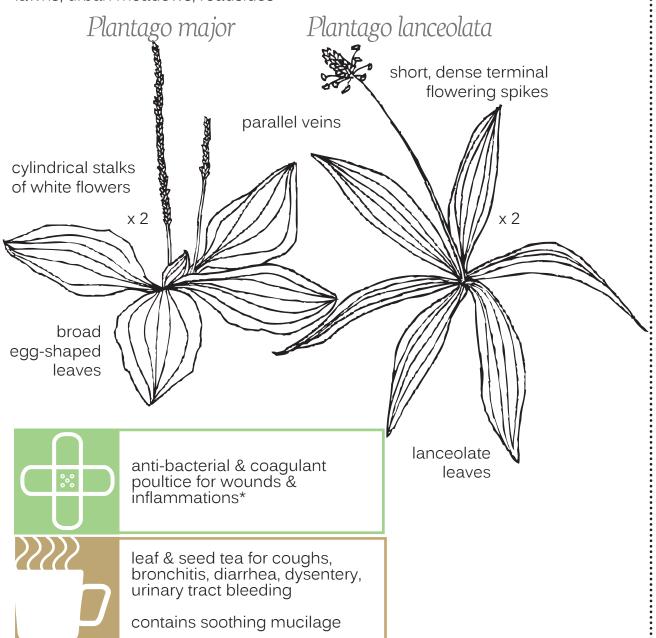
perennial

minimally maintained lawns, parks, and grasslands, roadsides, lots



# plantains 😯

semi-evergreen perennial lawns, urban meadows, roadsides



# lamb's quarters

Chenopodium album

summer annual

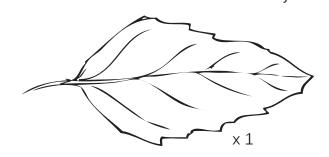
lawns, urban meadows, roadsides, public parks, waste areas



2 to 4" long

large inflorescences at ends of branches with tiny fruits

**note**: make sure to differentiate between *C. album* and its close relative, *C. ambrosiodes*, which is potentially toxic, though commonly used as a Mexican spice known as epazote. Epazote leaves are more lobed.





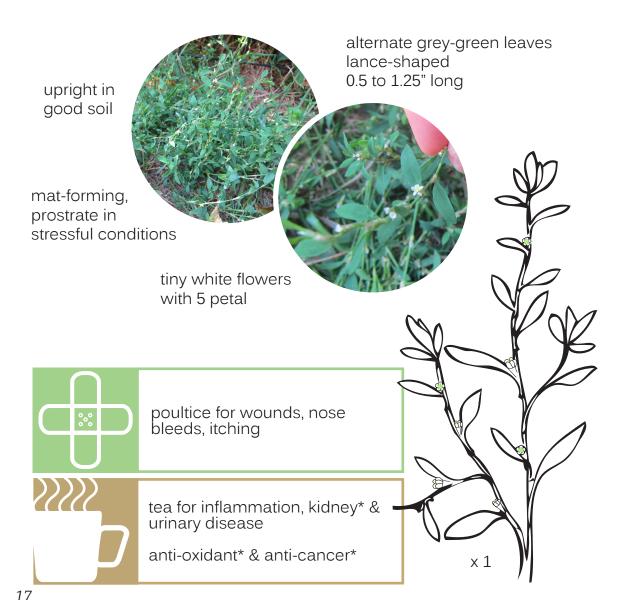
young leaves & stem contains vitamins, minerals, protein folic acid

relative of spinach & quinoa

## prostrate knotweed 😂

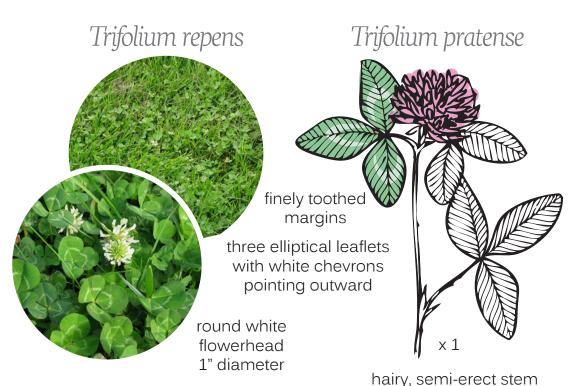
Polygonum aviculare

summer annual lawns, urban meadows, roadsides





perennial lawns, parks, grasslands, roadsides, lots





note: this is not a clover! this is wood sorrel, which is also useful & yummy!



poultice for burns & ulcers



cough suppressant mild sedative

extract for reducing menopausal symptoms\*

# burdock •

Arctium lappa, minus

biennial

lawns, urban meadows, roadsides

egg-shaped upper leaves

broad, heartshaped lower leaves

elephant earshaped basal leaves

leaves

essential oil for psoriasis



anti-inflammatory\*

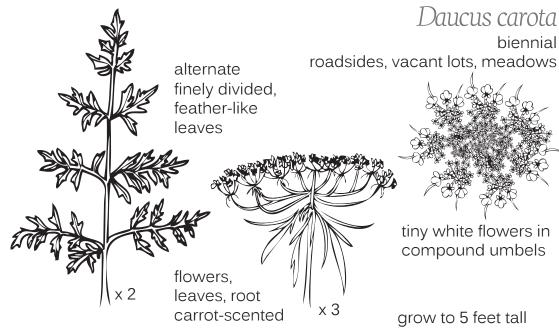
tea for arthritis, sore throat, congestion, & immune system boost



first year root known as gobo in Japanese cuisine

young leaves

# queen anne's lace





seed oil in skin products as antiwrinkle agent



diuretic plant & seed tea for urinary problems



root with dense carrot flavor best suited for cake & soup

root carotenoids support eyes





root

16

purple

flowers

& prickly,

clinging

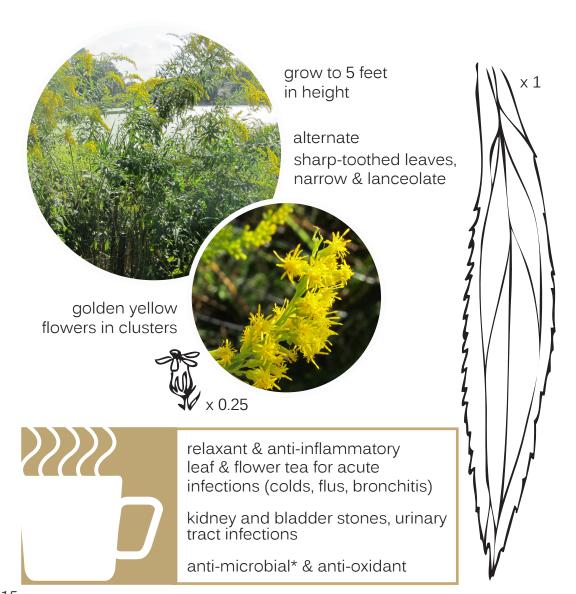
fruits

grows to 7 to 8 feet

## goldenrod

Solidago canadensis

perennial fields, edges, roadsides, urban meadows, vacant lots



# evening primrose

Oenothera biennis

biennial

dry, sandy, gravelly soil, urban parks



basal rosette of lanceshaped leaves with coarse margins and white central veins

4" to 8" long







seed oil extract for essential fatty acid deficiency, high cholesterol, premenstrual symptoms, mild depression

thins blood platelets\*



young leaves

first year roots in fall or early spring

# dandelion 🔀 📘





### Taraxacum officinale

perennial

lawns, vacant lots, rubble, pavement cracks, rocks\_walls, etc.

low-growing

basal rosette of divided leaves 3 to 10" long toothed margins with tips point toward center of plant

bright yellow composite flowers that turn into puffball seed heads



fresh root tea as powerful diuretic, digestive/appetite stimulant

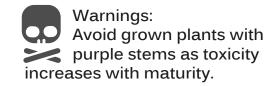
treats liver, bladder, kidney ailments\*



good source of vitamins A & C

leaves for salad

roasted root as coffee substitute



# pokeweed

### Phytolacca americana

perennial

alternate leaves

fields, gardens, roadsides, waste areas

bright purple stems

> drooping clusters of purple-black berries

grows to 10 feet, but often 5 feet

entire and ovate with musty smell when rubbed



root poultice for swelling, arthritis, eczema



purgative tea root extract for immunity



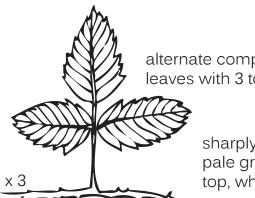
young shoots in spring berries for food coloring



# black raspberry

### Rubus occidentalis

deciduous shrub lawns, urban meadows, roadsides



alternate compound leaves with 3 to 5 leaflets

> sharply toothed and pale green color on top, white below



grow to 4-6 feet









delicious berries



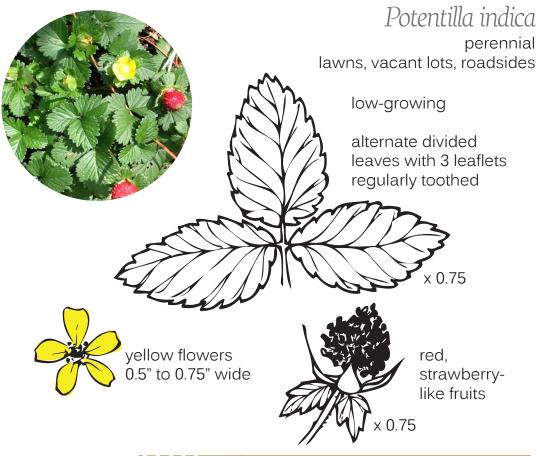
purple-black fruits in midsummer

wide in early

summer



# mock strawberry





plant tea or decoction for sore throats, irregular uterine discharge or bleeding

anti-oxidant & anti-inflammatory\*



tasteless berries

## jap. knotweed 😂 🙎 📘





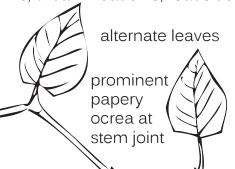




perennial

lawns, urban meadows, roadsides, vacant lots

hollow stems



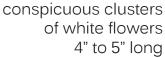
broadly eggshaped with pointed tip up to 6" long by 3"-4" wide



clusters of green-white lantern-like seedpods



poultice for sores, burns, carbuncles





root tea for treating menstrual & post-partum problems, jaundice, cough

strong anti-oxidant & antiinflammatory\*



edible young shoots in spring similar to asparagus



# lady's thumb

Polygonum persicaria

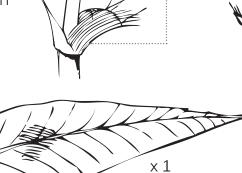
summer annual moist soil in sun or shade parks, vacant lots, riparian zones

grow in patches up to 2 feet tall

alternate leaves

smooth stems with fringed joints

leaves lanceolate to elliptical with dark "thumbprint" on center of each leaf



densely branched with terminal clusters of tiny pink flowers



leaf tea astringent for menstrual & internal bleeding problems