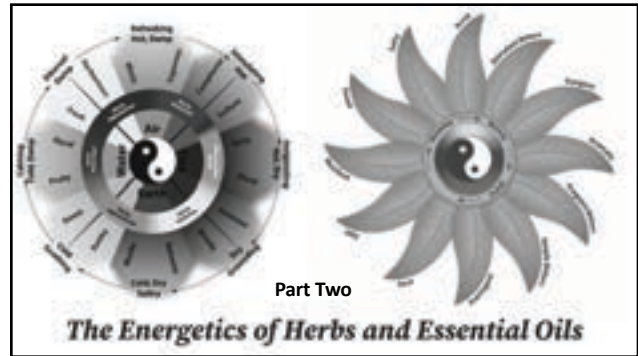




1




2



3

### Life is Energy




- All life processes require energy
- The idea that health and healing is connected to some type of energetic process has a long history in many cultures
- Eastern traditions posited the idea of a vital energy called qi [Chinese] or prana [Ayurvedic]
- Traditional Western medicine spoke of a vital force and belief that the vital force creates life and healing is called vitalism
- Many traditions also call this non-material force—spirit
- Modern medicine tends to ignore these ideas, claiming "there is no ghost in the machine"

4

### Bioelectrical Energy


- Even if we reject the idea of a soul or spirit in the body, looking at life as an energetic process is still valid
- Since all "work" requires energy, healing cannot take place if there is not enough energy to do the "work" of healing
- So, let's briefly examine some concepts about energy




5

### Redox Reactions and Electron Transfer

#### Oxidation



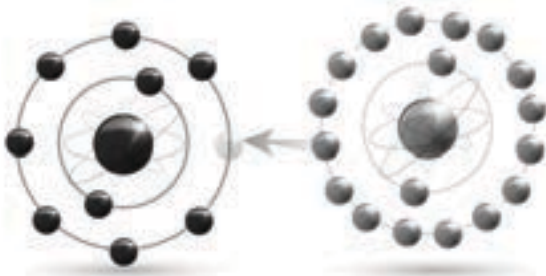
#### Reduction



- The molecule that gives up the electron is said to be oxidized
- The molecule that receives an electron is reduced

6

### Free Radical - Antioxidant



7

### Batteries and Electrical Flow

- Batteries have an alkaline medium and an acidic medium
- When a circuit is connected between the two, electrons flow from the alkaline side to the acidic side, releasing energy
- Our bodies store energy in cellular "batteries" to be released as needed for our use
- Example: relaxed muscles hold an energy charge (alkaline) while tense muscles are depleted in energy (acid)



8

### EZ Zones and Structured Water

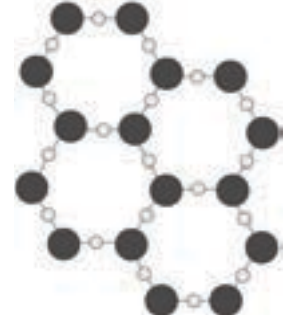
- When water comes in contact with a membrane (like those found in cells) it forms exclusion zones (EZ) next to the membrane
- Any impurities in the water are excluded from the EZ zone
- Water in the EZ zone is structured water (H3O2)
- EZ zones are recharged by radiant energy (infrared) or heat and light



9

### Structured Water

- EZ water has a honeycomb structure similar to ice
- However, the layers are offset in a helical pattern that creates great stability
- This form of water is known as hydronium, a fourth phase of water
- EZ zones are charged by radiant energy (heat and light)



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### EZ Zone Batteries

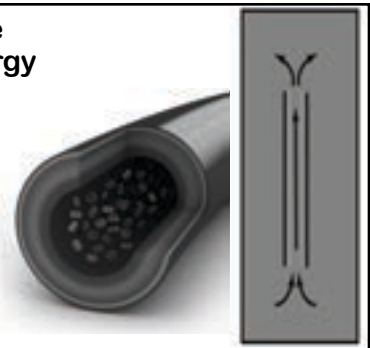
- Water in the EZ zone is alkaline because extra hydrogen atoms (with extra electrons) are drawn into the EZ Zone
- This makes water outside the EZ zone more acid
- This forms a natural battery because a current will flow between the zones if electrodes are placed into the two zones



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### EZ Zones Create Mechanical Energy

- If a membrane-lined tube is inserted into a tank of water, as the EZ zones form along the sides of the tube water begins to flow from one end of the tube to the other
- This mechanism may help explain how trees move water hundreds of feet into the air
- It may also help to explain why blood starts flowing in the fetus before the heart starts beating



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## Joints and EZ Zones

- Cartilage is a gel-like material, so it forms EZ Zones
- Both surfaces of a joint are coated in cartilage
- The hydronium atoms building up on the EZ zones in the joint would prevent the surfaces from touching, creating a very low friction surface



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## Energy Levels Affect Health

- Health can partially be expressed as a measure of how much electrical potential is stored within the tissues
- The storage of energy potential is roughly reflected in the pH of tissues
- If your body "batteries" have a high energy charge you feel alert, refreshed, revitalized, alive, and healthy
- As levels of stored energy diminish, health diminishes and you feel tired, weak, and sick
- In order to create healing, there needs to be a higher-than-normal level of energy available

Cell pH	Voltage	Tissue Condition
7.88	-50 mV	Acute Inflammation
7.61	-35 mV	Normal for kids
7.53	-30 mV	
7.44	-25 mV	Normal for adults
7.35	-20 mV	Subacute
7.26	-15 mV	Tired
7.18	-10 mV	Sick
7.09	-5 mV	Chronic
7.00	0 mV	Polarity Shift
6.83	+20 mV	Degenerative
6.48	+30 mV	Cancer occurs

Table above adapted from  
Healing is Voltage by Jerry Tennant



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## Beyond Plant Chemistry

- Our mechanical view of the world causes us to see plant chemicals (constituents) as the primary source of healing
- But what if there is also an energetic component to herbal medicine?
- Do plants also have a "vital force" and is this part of what gives them healing properties?



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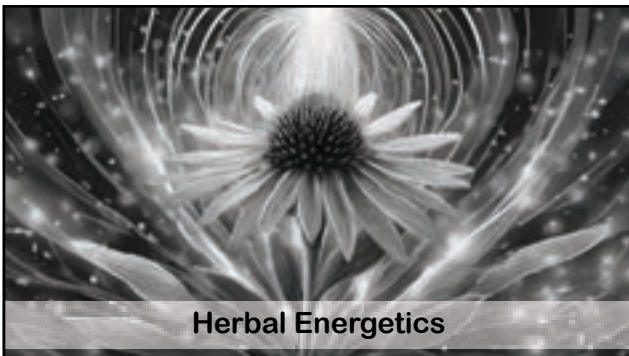
## Fresh versus Devitalized

- The minute we harvest a plant it begins to die
- Antioxidant levels (representing the ability to donate electrons for energy) begin to drop
- The more we process the food, the more we denature or devitalize it
- This suggests that the more processed something is, the less vital energy it has to contribute to our health



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## Herbal Energetics



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## Twelve Categories of Herbs



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## Water (Yin) and Fire (Yang)

### Water or Yin

- Receives and expands
- Aids assimilation
- Aids creation and storage of energy
- Associated with nighttime and winter
- Promotes rest and relaxation
- Aids playfulness, peacefulness and openness
- Promotes softness, gentleness and sensitivity

### Fire or Yang

- Contracts and discharges
- Aids elimination
- Aids breakdown and discharge of energy
- Associated with daytime and summer
- Promotes activity and alertness
- Aids work, direction and assertiveness
- Promotes hardness, firmness and self-containment

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## Fire Element



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## Understanding the Fire Element

- Fire breaks material down into smaller components, releasing energy (heat and light) in the process
- Fire is connected to oxidative processes, substances that borrow or "steal" electrons from other substances
- Fire energy reflects catabolic (breaking down) processes and the discharge of energy
- Energy creates movement, so all activity is related to the idea of fire



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## Discharge is Not Recharge



- It is important to recognize that energy discharge is NOT the same as energy storage
- During yang or fire phases (daytime and summer), energy is being discharged, not recharged
- For example, when you're using your cell phone the battery is discharging
- To have more energy available for your phone to use you have to recharge the battery

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## Fire Herbs

- Would have to stimulate or move energy
- Would move outward rapidly
- Would increase activity in the body
- Primary Herbal Category: Aromatic
- Secondary Herbal Categories
  - Pungent
  - Fragrant Bitter



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## Properties of Volatile (Essential) Oils

- Evaporate in the presence of heat
- Dissipate rapidly into the air
- Are responsible for the fragrance (and much of the taste) of flowers, herbs, and foods
- Don't mix with water
- Stimulate tissues to increase activity



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## Aromatic Herbs

- **Characteristics**
  - Strong aroma, many are used as seasonings for adding flavor to food
- **Constituents**
  - Essential or volatile oils
- **Energetics:** Warming and drying
- **Opposite Category:** Mucilant
- **Major Healing Properties:** Carminative, expectorant, decongestant, nervine, sudorific or diaphoretic, digestive stimulant



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## Examples of Aromatic Herbs

- Angelica
- Anise
- Basil
- Caraway
- Cardamom
- Catnip
- Chamomile
- Coriander
- Cumin
- Dill
- Dong Quai
- Fennel
- Lavender
- Lemon balm
- Oregano
- Peppermint
- Pine
- Rose petals
- Rosemary
- Sage
- Spearmint
- Yarrow



Peppermint



Chamomile

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## Pungent Herbs

- **Characteristics**
  - Spicy or hot taste, biting aroma
  - Also used as seasonings for food
- **Constituents**
  - Resins
  - Allyl-sulphides
  - Alkamindes
  - Some essential oils (monoterpenes)
- **Energetics:** Warming and drying
- **Opposite Category:** Oily
- **Healing Properties:** Circulatory stimulant, digestive stimulant, expectorant, decongestant, sudorific and diaphoretic, antiseptic, disinfectant



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## Examples of Pungent Herbs

- Black pepper
- Capsicum
- Chili Peppers
- Cinnamon
- Clove
- Garlic
- Ginger
- Horseradish
- Mustard
- Watercress



Ginger



Garlic

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## Fragrant Bitters

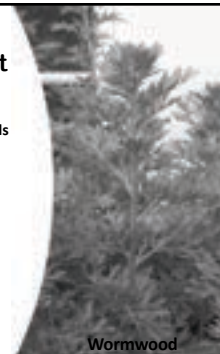
- **Characteristics**
  - Bitter taste; bitter aroma (often not pleasant)
- **Constituents**
  - Sesquiterpene lactones and triterpenes
- **Energetics:** Slightly warming and drying
- **Opposite Category:** Sweet
- **Healing Properties:** Digestive stimulants, antimicrobial, antiparasitic, detoxifying, may be calming, some are toxic



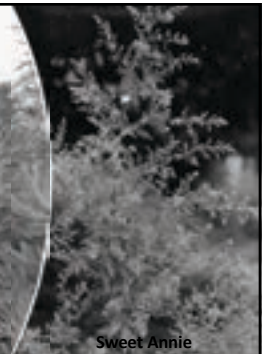
29

## Examples of Fragrant Bitters

- Black walnut hulls
- Elecampane
- Sagebrush
- Sweet Annie
- Tansy
- Wormseed
- Wormwood
- Hops
- Valerian



Wormwood



Sweet Annie

30

## Fire Herb Summary

- Pungent herbs are more heating with rapid but quickly dissipating effects
- Aromatics are more sustained in their warming effects and often have nervous system properties as well
- Fragrant bitters are less heating and more drying and detoxifying



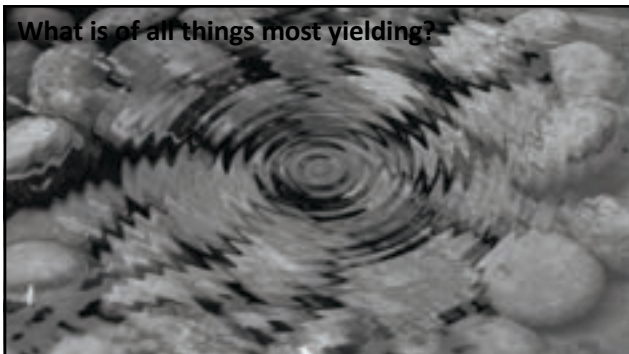
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## Water Element



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What is of all things most yielding?



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Can overcome that which is most hard?

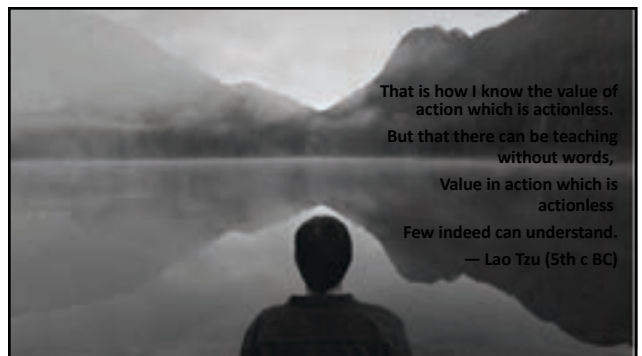
34

Being substance-less, it can enter in even where there is no crevice.



35

That is how I know the value of action which is actionless.  
But that there can be teaching without words,  
Value in action which is actionless  
Few indeed can understand.  
— Lao Tzu (5th c BC)



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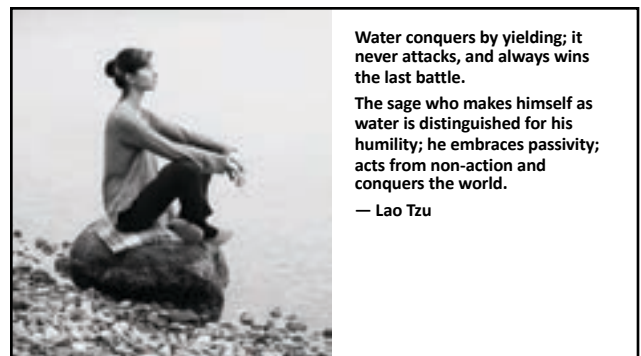
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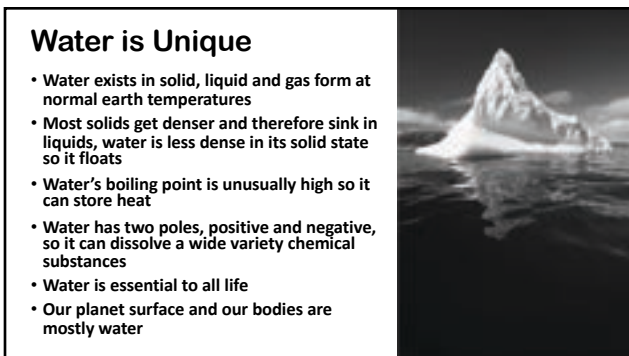
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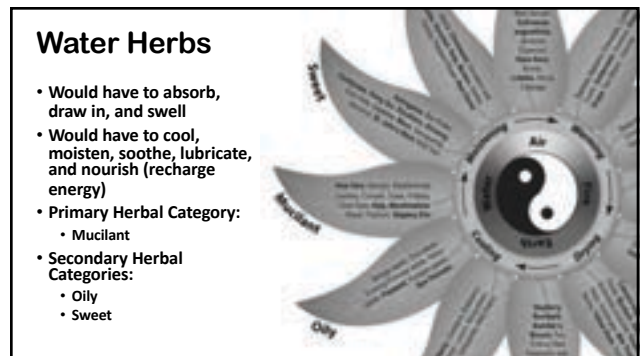
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## Mucilant Herbs

- **Characteristics**
  - Absorb water and swell
  - Soothe, moisten, and cool tissues
  - Have nourishing qualities
- **Constituents**
  - Contain mucopolysaccharides (mucilage and gums)
- **Energetics:** Cooling and moistening
- **Opposite category:** Aromatic
- **Properties:** Demulcent, emollient, bulk laxative, soothing, moistening, cooling, absorbent



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## Examples of Mucilant Herbs

- Aloe Vera
- Chia Seeds
- Comfrey
- Irish Moss
- Kelp
- Marshmallow
- Okra
- Psyllium
- Slippery Elm



Aloe Vera



Okra

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## Oily Herbs



- **Characteristics**
  - Soothe, moisten, and cool tissues
  - Have nourishing qualities
- **Constituents**
  - Contain vegetable oils (triglycerides)
- **Energetics:** Moistening, cooling and nourishing
- **Opposite Category:** Pungent
- **Healing Properties:** Emollient, lubricating, soothing, moistening, cooling, nourishing

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## Examples of Oily Herbs

- Black current seed
- Borage seeds
- Chia seeds
- Coconut
- Evening primrose seed
- Flaxseed
- Hemp seeds
- Olives
- Pumpkin seeds
- Sunflower seeds

Coconut



Flaxseed



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## Sweet Herbs

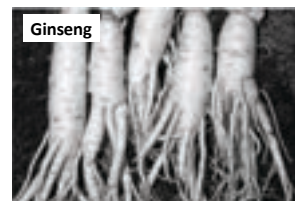
- **Characteristics**
  - Bitter-sweet flavor
  - Traditionally used as tonics
- **Constituents**
  - Polysaccharides, saponins, and others
- **Energetics:** Moistening, neutral, and nourishing
- **Opposite Category:** Fragrant Bitter
- **Healing Properties:** Tonic, nourishing, softening, building, restorative, adaptogenic



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Licorice Root



Ginseng

## Examples of Sweet (Tonic) Herbs

- American ginseng
- Astragalus
- Bee Pollen
- Beet Root
- Codonopsis
- Dong Quai
- Eleuthero root
- Korean ginseng
- Licorice
- Medicinal Mushrooms
- Spirulina
- Stevia

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## Air (Change) and Earth (Stability)

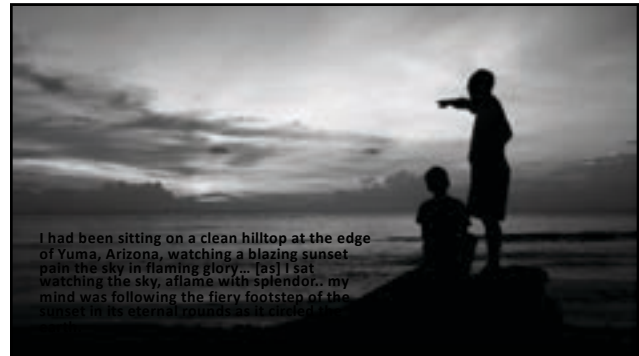
### Air (Yin to Yang Shift)

- Shift from absorption to discharge of energy
- Associated with morning and springtime
- Helps to clear congestion, stagnation, stuffiness
- Initiates release and detoxification
- Promotes feelings of release, openness and freedom
- Associated with new beginnings, release and forgiveness

### Earth (Yang to Yin Shift)

- Shift from discharge to absorption of energy
- Associated with evening and autumn or fall
- Helps to clear emptiness, weakness and malnourishment
- Initiates absorption and assimilation
- Promotes feelings of desire, connection and connection
- Associated with contemplation, satisfaction and receiving

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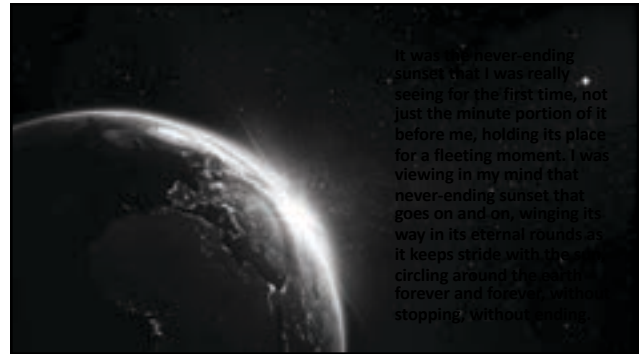
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I yearned for a plane that would travel at just the right speed to keep that sunset before me for at least one full, twenty-four-hour span. I was viewing with new eyes the breathtaking wonder of the sunset eternal—the sunset that is always and forever and forever—the eternal sunset shaking out its blazing blankets to bed down the earth where the day goes tip-toeing out.



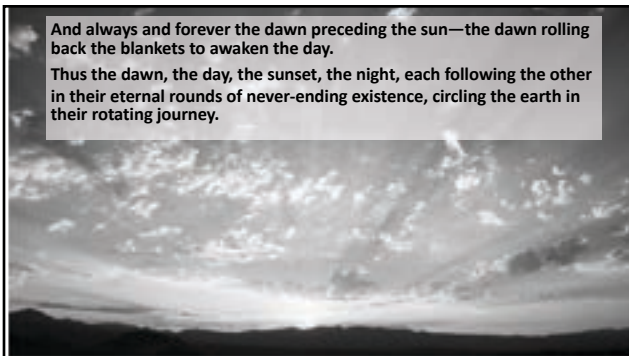
51

It was the never-ending sunset that I was really seeing for the first time, not just the minute portion of it before me, holding its place for a fleeting moment. I was viewing in my mind that never-ending sunset that goes on and on, winging its way in its eternal rounds as it keeps stride with the earth circling around the earth forever and forever, without stopping, without ending.



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And always and forever the dawn preceding the sun—the dawn rolling back the blankets to awaken the day. Thus the dawn, the day, the sunset, the night, each following the other in their eternal rounds of never-ending existence, circling the earth in their rotating journey.

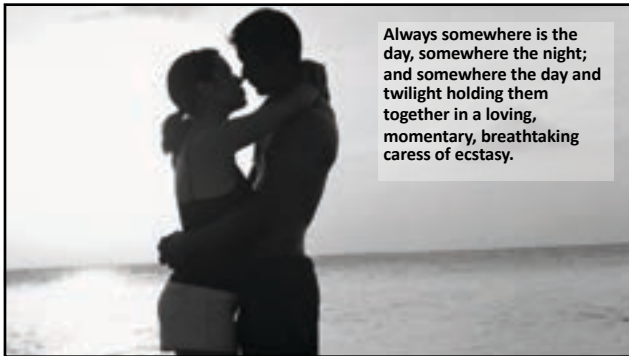


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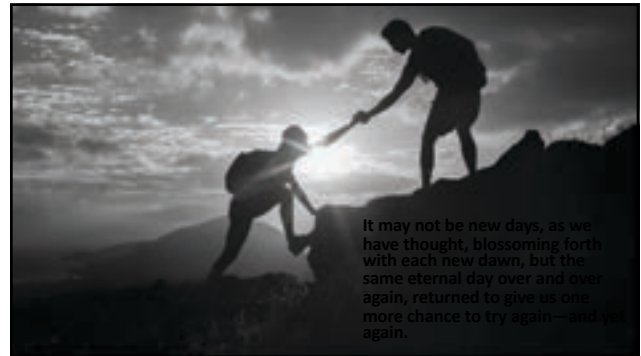
They each exist completely and fully at all times, together, yet individually apart. The dawn and the sunset are but the soft kisses, or the delicate handclasp between night and day—their meeting place of lingering caress.



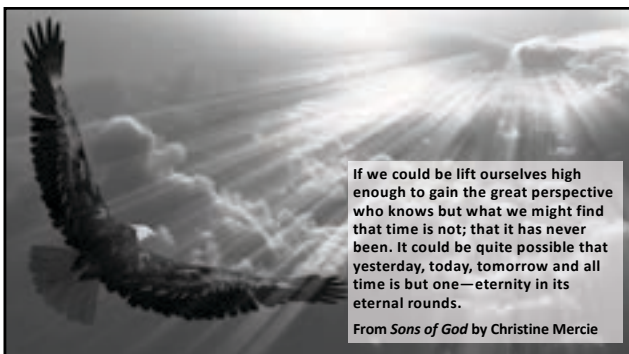
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56



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### Air

- Would have to help transition from a state of fullness to the process of discharge
- Would have opening, awakening, motivating, and energizing properties
- Primary Herbal Category
  - Acrid, includes Diffusive
- Secondary Herbal Categories
  - Salty
  - Bitter Stimulants

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### Acrid Herbs

- Characteristics
  - Bitter, nasty, taste that may have a sour, burning quality
- Constituents
  - Resins and Alkaloids
- Energetics: Relaxing, Warming, and Neutral
- Opposite Category: Astringent
- Healing Properties: Antispasmodic, diffusive, decongestant, emetic, diaphoretic

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### Examples of Acrid Herbs

- My favorites:
  - Lobelia
  - Kava Kava
- Other examples:
  - Black cohosh
  - Blue vervain
  - Skunk cabbage
  - Echinacea (angustifolia)
  - Spilanthes

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## Salty Herbs

- **Characteristics**
  - Slightly salty, grassy or "green" taste (think of celery or spinach)
- **Constituents**
  - Salts of magnesium, potassium, sodium and calcium
- **Energetics:** Nourishing, balancing, neutral
- **Opposite Category:** Simple Bitters
- **Healing Properties:** Lymphatic, alterative, diuretic, moistening, decongestant, vulnerary, mineralizing, alkalizing



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## Examples of Salty Herbs

- Alfalfa
- Barley Grass
- Celery
- Chickweed
- Dandelion leaf
- Horsetail
- Mullein
- Nettles
- Red clover
- Seaweeds (kelp, dulse)
- Wheat grass



Nettles

Mullein

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## Bitter Stimulants

- **Characteristics**
  - Bitter tasting herbs that act as stimulants
- **Constituents**
  - Alkaloids such as caffeine, berberine, and nicotine
- **Energetics:** Slightly warming, drying
- **Opposite Category:** Sour
- **Healing Properties:** Metabolic stimulant, vasoconstrictive, detoxifying, diuretic, digestive stimulant, antimicrobial (berberine)



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## Examples of Bitter Stimulants

- **Caffeine/Theobromine:**
  - Coffee
  - Chocolate
  - Kola Nuts
- **Berberine**
  - Barberry
  - Goldenseal
  - Oregon Grape
- **Others:**
  - Chinese ephedra
  - Scotch broom
  - Tobacco



Coffee

Oregon Grape

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## Earth

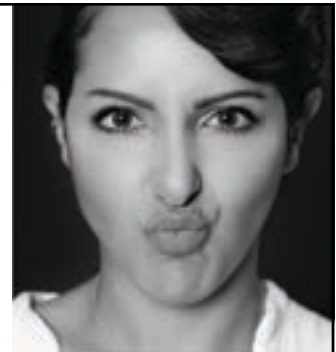
- Transition from a state of discharge to a state of rest and expansion
- Make tissues tighter, firmer, more dense
- **Primary Herbal Category**
  - Astringent
- **Secondary Herbal Categories**
  - Simple Bitters
  - Sour



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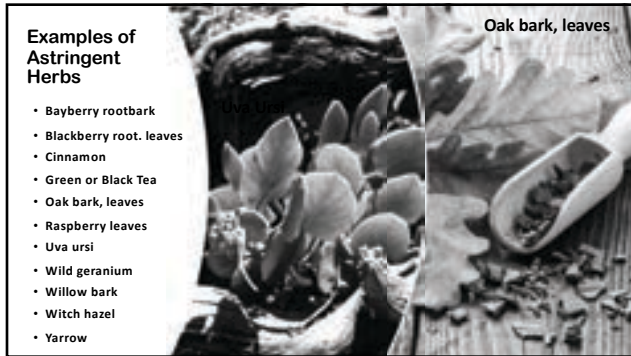
## Astringent Herbs

- **Characteristics**
  - Slightly bitter, with drying, slightly puckering sensation
- **Constituents:**
  - Tannins, tannic and gallic acid
- **Energetics:** Constricting, drying, cooling
- **Opposite Category:** Acrid
- **Healing Properties:** Styptic, vulnerary, antivenomous, toning, arresting discharge

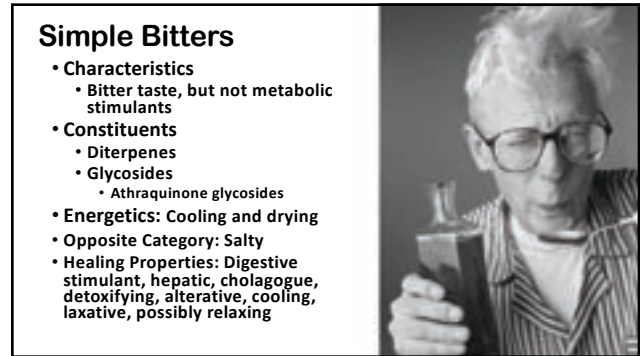


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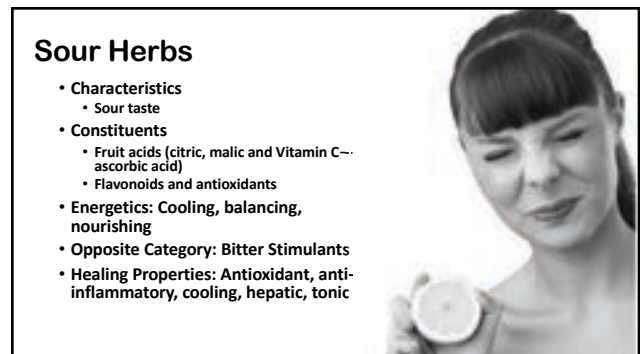
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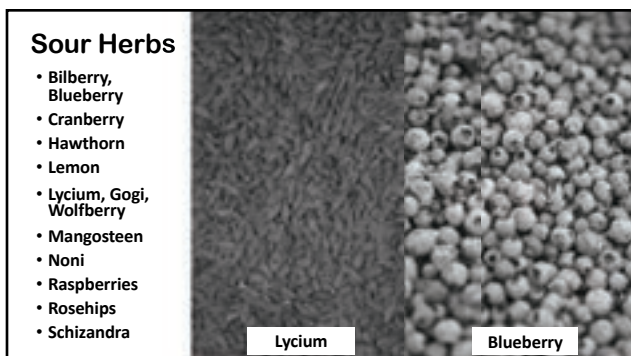
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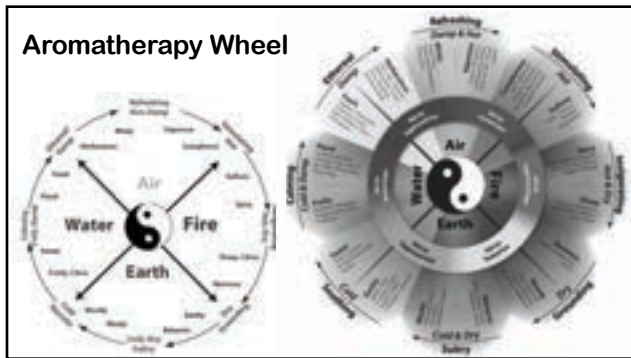


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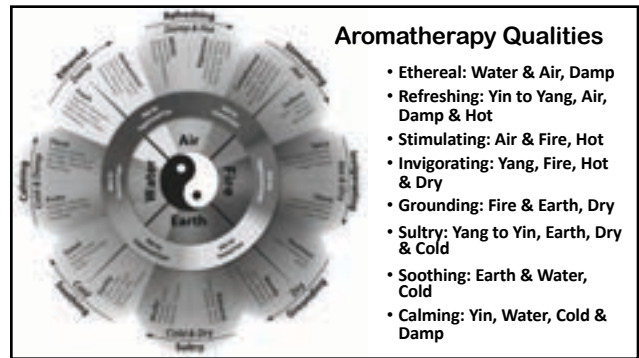


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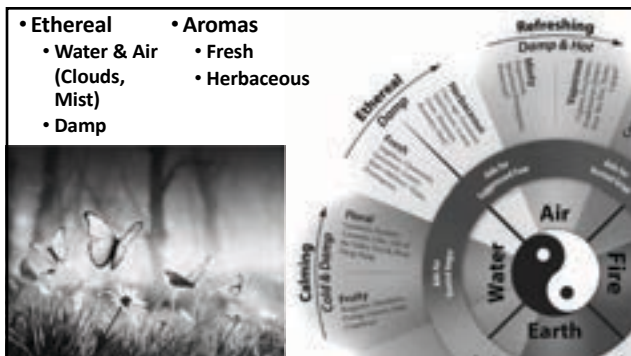




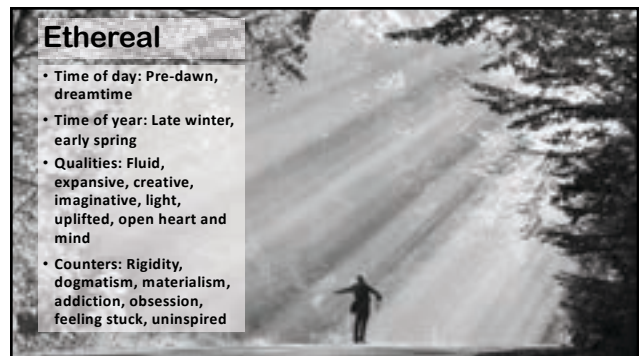
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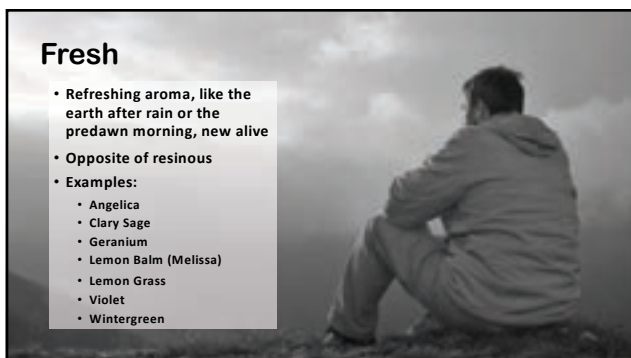
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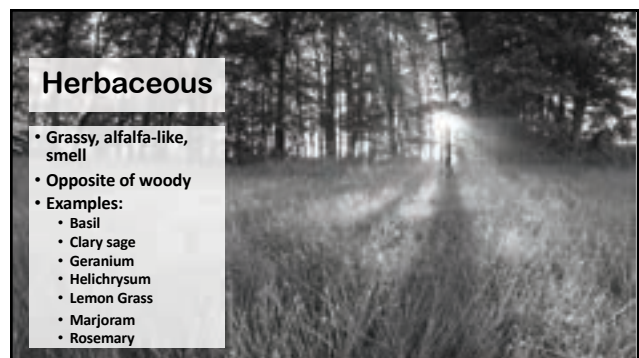
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- Refreshing
  - Air
  - Yin to Yang
  - Damp & Hot
- Aromas
  - Minty
  - Vaporous



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### Refreshing

- Time of day: Morning, sunrise
- Time of year: Spring, spring equinox
- Associated with the breath of life, breathing and inspiration
- Qualities: Renewed, revived, replenished, awake, unburdened, open, emotionally free, generous, giving
- Counters: Self-pity, toxic shame, victim-hood, emotional paralysis, feeling burdened and weighed down, stifled, stingy

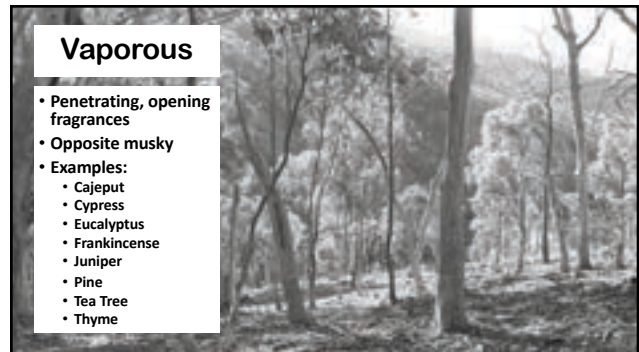
80

### Minty

- Mint like smell (members of the mint family)
- Opposite balsamic
- Examples:
  - Pennyroyal
  - Peppermint
  - Spearmint
  - Wintergreen
  - Pennyroyal




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### Vaporous

- Penetrating, opening fragrances
- Opposite musky
- Examples:
  - Cajeput
  - Cypress
  - Eucalyptus
  - Frankincense
  - Juniper
  - Pine
  - Tea Tree
  - Thyme

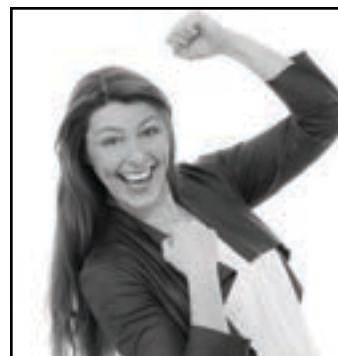
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- Stimulating
  - Air and Fire
  - Heating
- Aromas
  - Camphoric
  - Sulfuric (sulfurous)




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### Stimulating

- Putting air on a fire heats it up as in "fanning the flames"
- Time of day: Late morning
- Time of year: Late spring
- Qualities: Excited, stimulated, inspired, motivated, moving, outgoing, active
- Counters: Coldness, fatigue, feeling stuck, discouraged, unmotivated, procrastination, laziness.

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**Camphoric**

- Camphor-like smell
- Opposite earthy
- Examples:
  - Atlas Cedarwood
  - Bay Laurel
  - Camphor
  - Hyssop
  - Oregano
  - Marjoram
  - Ravintsara


85



**Sulfuric**

- Sulphur smell
- Opposite sweet
- Examples:
  - Garlic
  - Onions
  - Mustard
  - Horseradish

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**Invigorating**


- Fire
- Yang
- Hot & Dry

**Aromas**

- Spicy
- Sharp (Lemony)



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**Invigorating**

- Time of day: Daytime (noon)
- Time of year: Summer (summer solstice)
- Qualities: Enthusiastic, determined, outgoing, active, busy, driven, focused.
- Counters: Lack of direction, being wishy-washy, overly pleasing or yielding to others, discouraged, low energy and motivation.

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- Pungent, hot spicy aroma
- Opposite fruity
- Examples:
  - Black Pepper
  - Cinnamon
  - Clove
  - Ginger
  - Nutmeg
  - Tea Tree
  - Thyme




**Spicy**

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**Sharp**

- Lemony or citrus aroma with sharp edge
- Opposite floral
- Examples:
  - Lemon
  - Lemongrass
  - Lemon Balm (Melissa)
  - Lime
  - Citronella



90

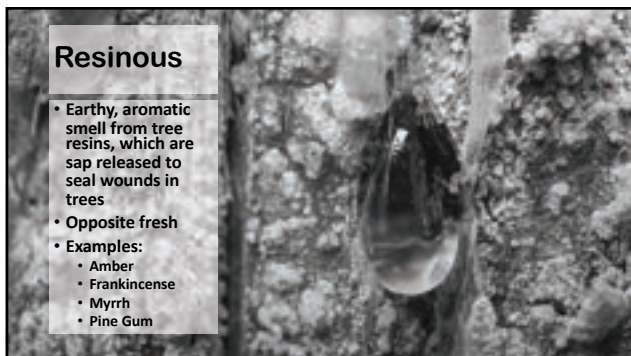




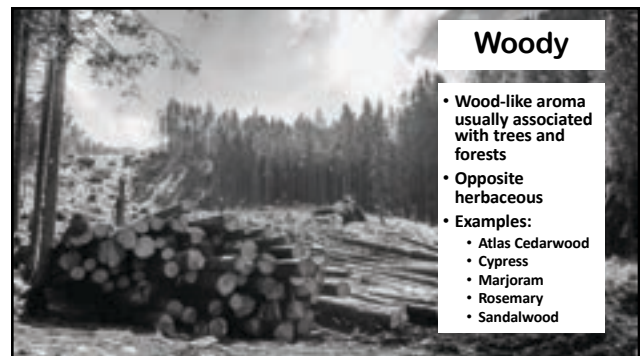
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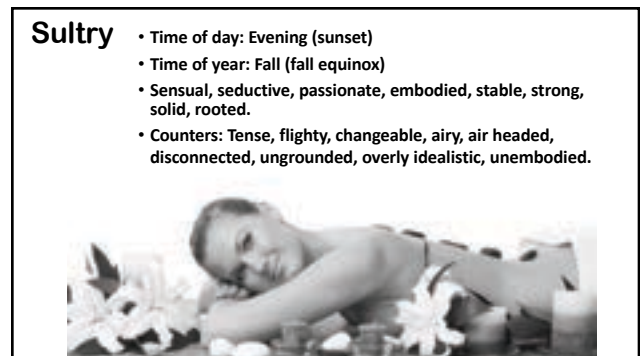
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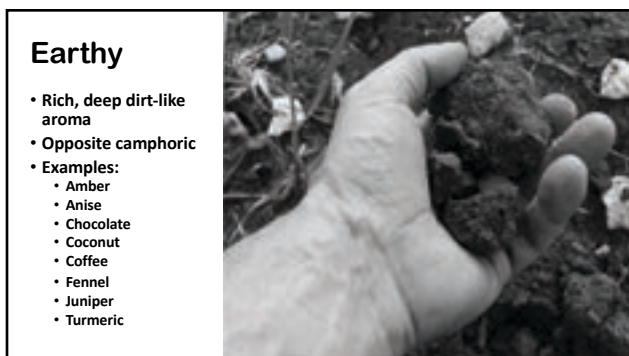
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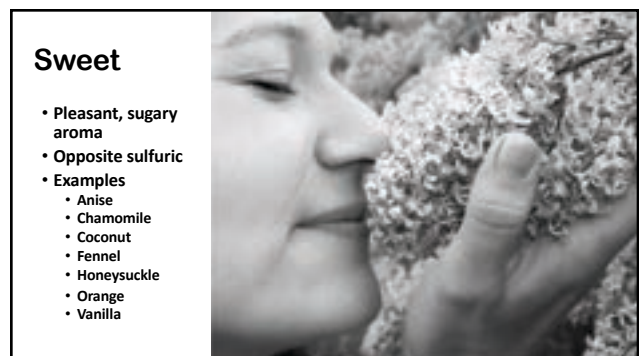
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- Calming
  - Water
  - Yin
  - Cold & Damp
- Aromas
  - Fruity
  - Floral

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### Calming

- Time of day: Night (midnight)
- Time of year: Winter (winter solstice)
- Qualities: Peaceful, flexible, relaxed, patient, tolerant, open hearted, yielding
- Counters: Irritability, anger, impatience, feeling stressed, workaholic, intolerance, fanaticism, restlessness




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### Fruity

- Sweet, fruit-like aroma, often citrusy
- Opposite spicy
- Examples:
  - Bergamot
  - Chamomile
  - Mandarin
  - Orange (Sweet)
  - Pink Grapefruit



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### Floral

- Light, flowery smell
- Opposite sharp
- Examples:
  - Gardenia
  - Jasmine
  - Lavender
  - Lilac
  - Lily of the Valley, Neroli
  - Rose
  - Ylang Ylang

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### Question and Answer Time



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