


Lectures 23–25
Herbals: The Connection Between Horticulture and Medicine




The prehistoric discovery that certain plants cause harm and others have curative powers is the origin of the healing professions and its practitioners (priest, physician, and apothecary), as well as professions devoted to plants (botany and horticulture).

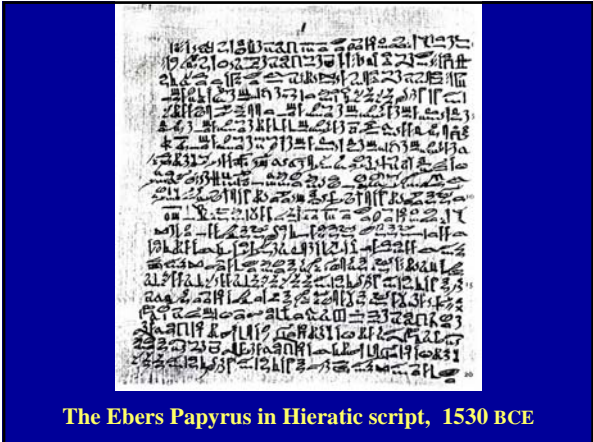
Herbal: A book about useful plants, especially medicinals

Herbals of Antiquity

Source	Herbal	Century	Comments
Sumarian	Nipur	21 st BCE	Earliest medical text
Egyptian	Ebers Papyrus	15 th BCE	Medical treatise, 811 prescriptions
Hellenic	Diocles of Carystus	4 th BCE	Lost ms
	Theophrastus <i>Historia de Plantis</i> <i>De Causis Plantarum</i>	4 th BCE	Botanical treatise
	Crateuas	1 st BCE	Lost illustrated ms, Physician to Mithridites

A Sumerian cuneiform tablet discovered at Nipur and pressed into clay circa 2100 BCE is the earliest known medical text. The contents may be older, perhaps by as much as a millennium. One translation directs the practitioner to “pulverize the bark of pear (?) tree and the ‘moon’ plant; infuse it with *kushumma* wine, let tree oil and hot cedar oil be spread over it.”





Ebers Papyrus Remedies

Remedy to clear out the body and to get rid of the excrement in the body of a person.

Berries of the castor-oil tree
 Chew and swallow down with beer in order to clear out all that is in the body.

Ebers Papyrus Remedies

Remedy to stop a crying of a child

Pods of the poppy plant (Opium)
 Fly dirt which is on the wall

Make into one, strain, and take for four days.
 It Acts At Once!

Ebers Papyrus Remedies


Another Remedy for the Body

Leaves of the castor oil plant (1/4)
 Dates of the male palm (5/6)
 Cyperus grass (1/16)
 Stalk of the poppy plant (1/16)
 Coriander (1/16)
 Cold beer (1/2)
 (Note: Quantities do not add up)


Keep moist, strain, and take for four days.

Herbals of Antiquity

Source	Herbal	Century	Comments
Roman	Dioscorides <i>De Materia Medica</i>	1 st CE	6 th century copy extant <i>Juliana Anicia codex</i>
	Pliny <i>Historia Naturalis</i>	1 st CE	Compilation
	Herbal of Apuleis	4 th CE	Derived from Pliny & Dioscorides
Chinese	Pen Ts'ao Ching <i>The Classic Herbal</i>	1 st CE	Refers to 27 th century BCE
Indian	Charaka	1 st CE	
	Susruta	2 nd CE	
Aztec	De la Cruz-Badiano <i>Herbal</i>	1522 CE	





Dioscorides from title page of Brunfel's *Herbarium Vivae Eicones*, 1530





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Pedanius Dioscorides (c. 20–70 CE)

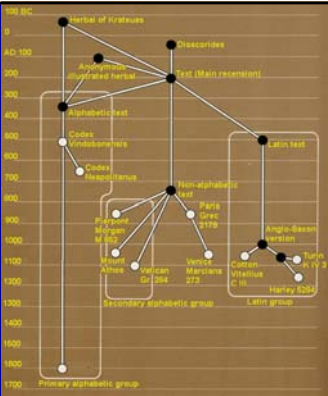
Dioscorides receiving mandrake from the nymph Euresis (Discovery) for Crateuas to paint. From Juliana Anicia Codex 512

Scene traced by Singer (1928)

Crateuas painting mandrake held by Epinoia (Thought and Intelligence)

Scene drawn by Martha Breen (Bredemeyer) in D'Andrea (1982)



Genealogy of Dioscoridian texts (after Singer)

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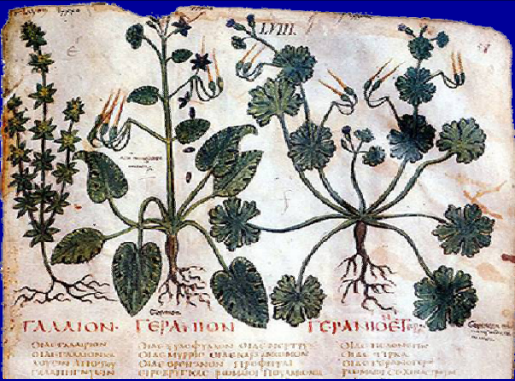
Images from
Dioscorides

Cowpea

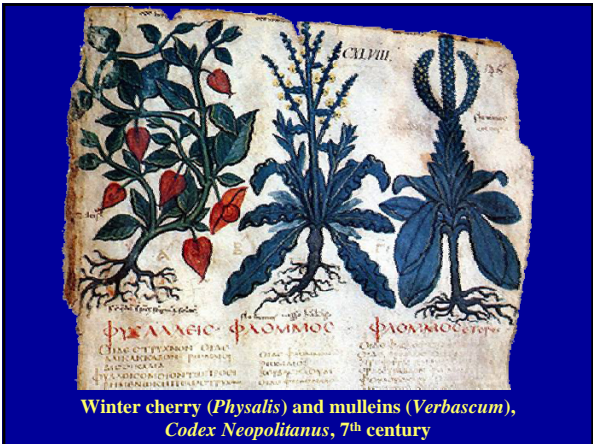




Ferula



Lady's bedstraw (*Galium*),
Cranesbill (*Erodium*), and *Geranium*



170. Euzomon. *Eruca sativa* Rocket

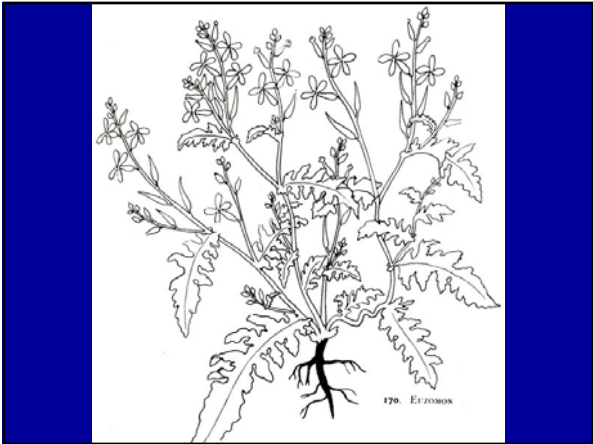
[the Romans call it *Eruca*, ye Aegyptians *Ethrekieen*, the Africans *Asuric*] This being eaten raw in any great quantitie doth provoke Venery, and the seed of it also doth work ye like effect, being vreticall and digestive, & good for ye belly.

They doe also use the seed of it in making of sawces, which that it may endure the longer, hauing macerated it first in vinegar, or milke, making it into Trochiscks, they afterward lay it up in store.

There also grows a wild *Eruca*, especially in Iberia towards ye west, whose seed the men there doe use instead of Mustard.

It is more diureticall, & farre sharper then the *Satiue*.


Source: The Greek herbal of Dioscorides.




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Rhizotomists gathering herbs

Apuleius Platonius herbal
c. 1200 CE




The interior of a pharmacy as represented in a manuscript of Treatise on Medicine by Dioscorides



Metropolitan Museum of Art,
New York

The preparation of an aromatic wine to treat coughs; from an Arabic translation of Treatise on Medicine by Dioscorides




Metropolitan Museum of Art, New York

Medieval Herbals

Source	Herbal	Date	Comments
German	Hildegard of Bingen <i>Physica</i>	1098–1179 CE	Woman mystic
	Albertus Magnus <i>On Plants</i>	1206–1280	Saint, Dominican


Herbal Notes
Physica (Hildegard of Bingen)



Hildegard of Bingen
1098–1179

1. First book in which woman discusses plants in relation to medical properties. Emphasis on medicine, includes recipes, diseases, cures, folk remedies.
2. Earliest book on natural history in Germany; influenced German Fathers of Botany.
3. Strongly concerned with science in contrast to other mystical and theological works.
4. Lists plants not translatable into Latin and thus first mention of German name.

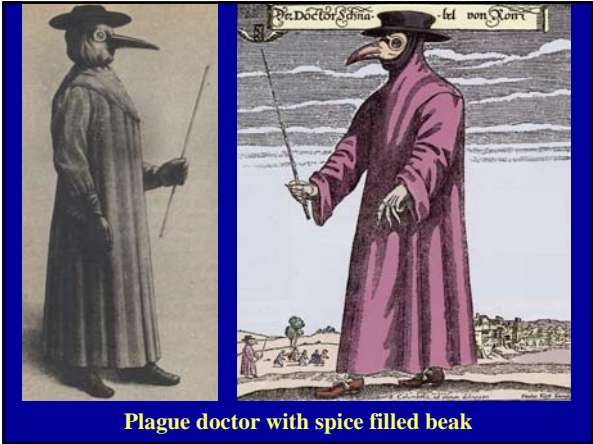
***On Plants* (Albertus Magnus) =
Albert of Bollstadt (1193–1280)**

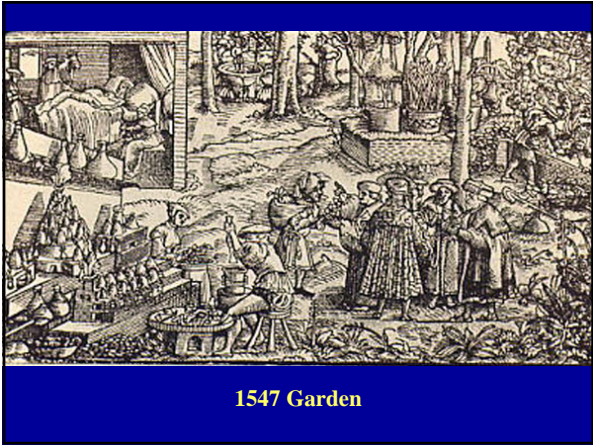


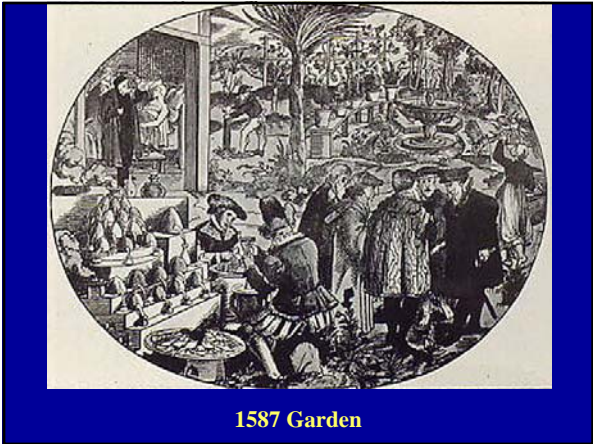
Albertus Magnus
1193–1280

1. Scholastic philosopher.
2. St Thomas Aquinas one of his pupils.
3. Worked on morphology, distinguishes between thorns (stem structures) and prickles (surface organs).
4. “The plant is a living being, and its life principle is the vegetable soul, whose function is limited to nourishment, growth and reproduction—feeling, desire, sleep, and sexuality, properly so called, being unknown in the plant world.”
5. Felt that species were mutable, pointed out that cultivated plants might run wild and become degenerate while wild plants might be domesticated.
6. Temperate tone on medical virtues.

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Herbalist garden & Store Room




European herb garden

Herbalists' Symbols


$\mathcal{M}\mathcal{I}$	pound	Σ	sugar
$\mathcal{A}\mathcal{N}\mathcal{A}$	equal amounts	\mathcal{X}	alcohol
$\mathcal{Z}\mathcal{I}$	ounce	$\mathcal{O}\mathcal{D}$	honey
$\mathcal{D}\mathcal{I}$	dram	$\mathcal{M}\mathcal{I}$	mix
$\mathcal{S}\mathcal{I}$	scruple	\mathcal{B}	boil
$\mathcal{P}\mathcal{I}$	pinch	$\mathcal{R}\mathcal{O}$	take
$\mathcal{O}\mathcal{I}$	pirac	$\mathcal{O}\mathcal{M}$	distill
\mathcal{X}	still	\mathcal{D}	filter
\mathcal{O}	retort	\mathcal{A}	essence
$\mathcal{D}\mathcal{O}\mathcal{I}$	receiver	\mathcal{P}	powder
\mathcal{V}	vinegar	$\mathcal{D}\mathcal{O}$	compose

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**Medicinal plants based on the “Doctrine of Signatures”
in Porta’s *Phytognomonica***



Heart plants include peaches, citrons and bulbous roots.



Plants for scaly diseases include pine cones, thistles, catkins, and lily bulbs. The snake and fish were added to show scaly skin.

Printed Herbals

Source	Herbal	Date	Comments
Italian	Mattioli <i>Commentarii</i>	1544	Commentary on Dioscorides
German	Hieronymus Brunschwig <i>Das Bush zu Distillieren</i>	1500	Distillation
	Otto Brunfels <i>Herbarium Vivae Eicones</i>	1530, 1532, 1536	Known for illustration
	Jerome Bock <i>Kreuter Buch</i>	1542	Scientific
	Leonhart Fuchs <i>De Historia Stirpium</i>	1542	Scholarly

**Pier Andrea Mattioli
1501–1577**







Portrait from the first Bohemian edition of *Commentarii*. (on Dioscorides).
The motto *nec igne, nec ferro* (neither fire nor iron) refers to his preference for medication over surgery.

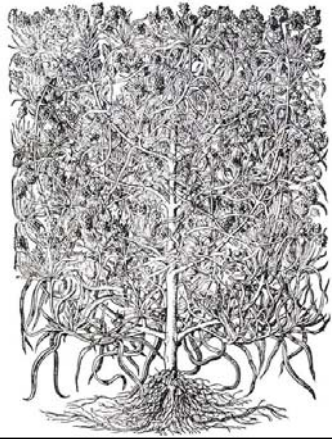
Commentarii of Mattioli

1. Famous herbal, many translations, at least 45 editions
2. First published 1544
3. Exposition of Dioscorides but includes all plants known to Mattioli
4. Later editions had beautiful figures
5. Did not have an expert knowledge of plants



Woodblock print of apple Woodblock print of pear

Woodblock print of *Psyllium*



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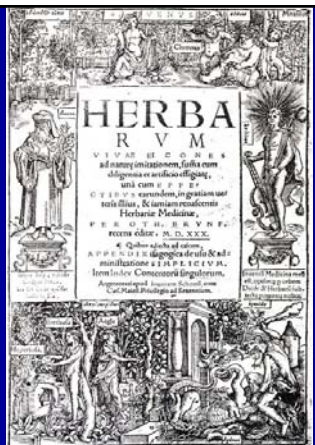




Herbarium Vivae Icones of Otto Brunfels

1. Modern age of botany began in 1530 with *Living Images of Plants*
2. Realistic and beautiful plant pictures, unequaled by Hans von Weiditz
3. Sequence based on when illustrations completed thus nonscientific
4. Watercolors recently found in 1930s
5. Text inferior to pictures, bookish

*Herbarium Vivae
Eicones frontpiece,
1530*



*Image of Anemone
pulsatilla,
showing the
advance in drawing*



**Hieronymus
(Jerome) Bock or
Tragus
1498–1554
Author of *Kreuter
Buch*, 1551**



***Kreuter Buch* of Jerome Boch**

Book discusses characteristics of plants in Germany; a new directions and thus a truly modern work.

1. Developed system of botany, arranged plants into categories
2. Wrote in a clear manner, understandable to laymen. Listed mode of occurrence and localities for plants mentioned. Thus a kind of Flora. Seems to have been a keen collector. Free from credulity.
3. Later editions supplied with pictures from Brunfels and Fuchs



**Leonhard Fuchs
(1501–1566)**

***De Historia Stirpium* of Leonhard
Fuchs
(Stirpium = plants)**

1. Interested in bringing reforms in German medicine
2. Careful matching figures with illustrations
3. Indices; in Greek, Latin, traditional herbal names, and German
4. Used masculine and feminine terminology for stronger and weaker
5. Good illustrations done under the supervision of Fuchs
6. First mention of maize

History of Horticulture: Lecture 23

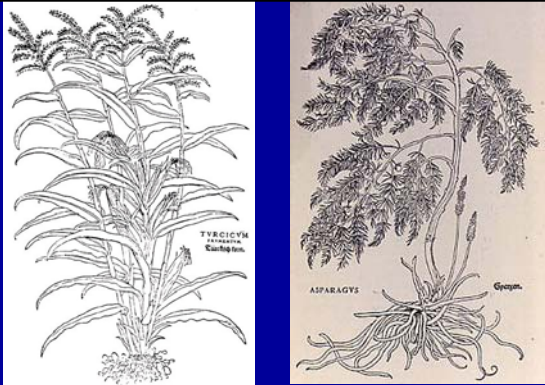
De Historia Stirpium

Illustrators
Heinrich Fullmaurer
Albrecht Meyer

Engraver
Veit Rudolf Speckle



The title page of the book 'De Historia Stirpium' features two illustrations. The top illustration shows two men, Heinrich Fullmaurer and Albrecht Meyer, seated at a table with a plant specimen. The bottom illustration is a portrait of Veit Rudolf Speckle, the engraver.



Maize called "Turkish korn"
from *De Historia Stirpium* 1542

Asparagus

The left illustration shows a maize plant with the Latin label 'TYRIGIVM' and the German label 'Turckisch Korn'. The right illustration shows an asparagus plant with the Latin label 'ASPARAGVS' and the German label 'Asparag'. Both are detailed line drawings showing the roots, stems, and leaves.



From Vienna Codex, Codex Vindobonensis Palatinas

The illustration shows a maize plant with a large ear of corn. The Latin label 'Turckisch Korn' and the German label 'Korn' are visible. The illustration is a color drawing with green leaves and a yellowish-brown ear of corn.

Printed Herbals

Source	Herbal	Date	Comments
Flemish	Rembert Dodoens <i>Cruydeboech</i>	1554	
	Charles de l'Eschuse (Clusius) <i>Histoire de Plantes</i>	1557	French transl. of Cruydeboech
	Matthias de l' Obel <i>Stirpium Adversaria Nova</i>	1570	

Note: Books of Dodoens Clusius, and Obel are interrelated

Rembert Dodoens (1517–1585)



1. The *Cruydeboech* continued traditions established by Bock of investigating local flora; he realized that plants of Europe were not all described by the ancients.
2. Studies plants of the Netherlands.
3. Condemned Doctrine of Signatures.
4. Basis of *Nievue Herbal* of Henry Lyte in 1578.




Frontispiece of *Cruydeboech*, 1554
The French translation was published in English, 1578, under the title of *A Nievue Herbal* by Henry Lyte. 1578.




Potato
(*Solanum tuberosum*)

Charles de L'Escluse (Clusius) 1526–1609
Histoire des Plantes 1557



1. Studies plants of Austria, Hungary, and Spain.
2. Great powers of observation, added 600 known plants
3. French translation of *Cruydeboech*
4. Interested in plants for their own sake; not preoccupied with medical side of plants.

Mathias de L'Obel (Lobelius) (1538–1616)
Stirpium Adversaria Nova

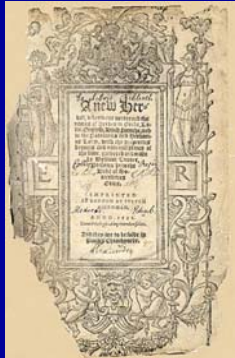


1. Studied plants of Southern France
2. Main work *Stirpium Adversaria Nova* published in 1570 with Pena.
3. Distinguishes plants by leaves.

Printed Herbals

Source	Herbal	Date	Comments
English	William Turner <i>A New Herball</i>	1551, 1562, 1568	
	Henry Lyte <i>Neivve Herbal</i>	1578	Trans. Dodoen's Cruydeboech
	John Gerard <i>Herball</i>	1597, 1633 2 nd ed.	
	Nicholas Culpeper <i>The English Phisitian</i>	1652	Astrological botany


William Turner
A New Herball



1st part in 1551 (London),
2nd in 1562 (Cologne), 3rd
in 1568

1. Figures of Fuchs.
2. Independent thinker, scorned superstition
3. Respectful of Ancients but not slavish

Henry Lyte (1578)
Niewe Herball



1. Based on the French version of Dodoens' Cruydeboech of 1554 made by l'Ecluse in 1557.
2. No mere mechanical translation but work is annotated and corrected with references to l'Obel and Turner.



Title page
Gerard's Herball, 1597



John Gerard 1597

Gerard's Preface

“Although my paines have not been spent (Curteous Reader) in the gracious discoverie of golden mines, nor in the tracing after silver veines, whereby my native country might be enriched with such merchandise as it hath most in request and admiration: yet hath my labour (I trust) been otherwise profitably employed, in descrying of such a harmlesse treasure of herbes, trees, and plants, as the earth frankly without violence offereth unto our most necessarie uses.”



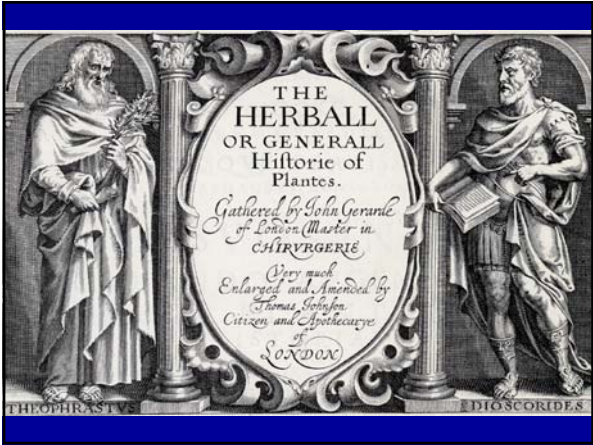
**Frontispiece of
The Herball of John Gerarde,
2nd ed.
Thomas Johnson, 1633**

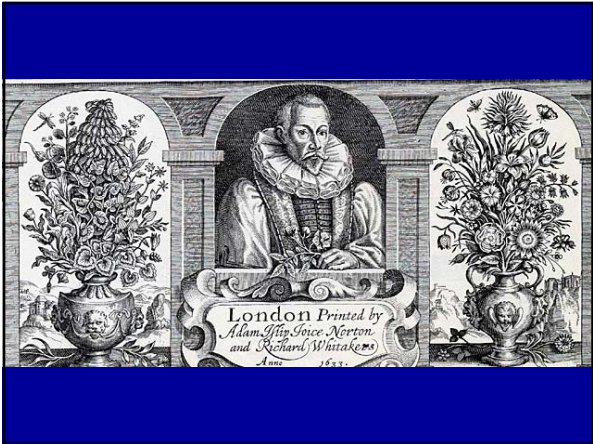
- 1. Most famous English herbal
- 2. 1636 edition augmented by Thomas Johnston



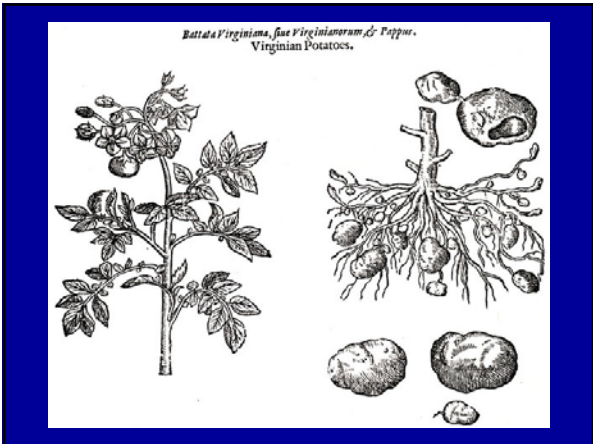
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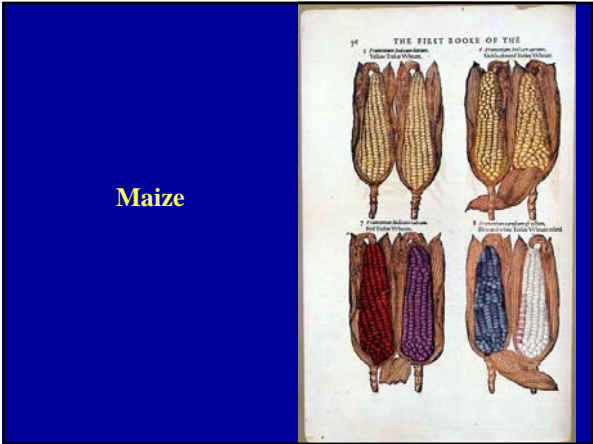




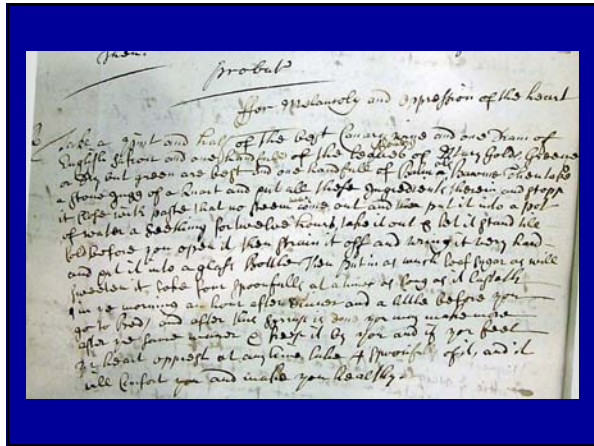
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For melancholy and oppression of the heart

For Melancholy and Oppression of the heart

Take a pint and half of the best Canary wine and one Dram of

English Saffron and one handfull of the leaves of Marygold, Greene

or Dry but green are best and one handfull of Balm oil Bawms; Then take

or Dry but green are best and one handfull of Balm oil Bawms; Then take

a stone jagg of a quart and put all these ingredients therein and stopp

a stone jagg of a quart and put all these ingredients therein and stopp

it close with paste that no steam come out and then put it into a pot

it, close with paste that no steam may come out and then put it into a pot

of water a soaking for twelve hours, take it out & let it stand till

of water a soaking for twelve hours, take it out and let it stand till

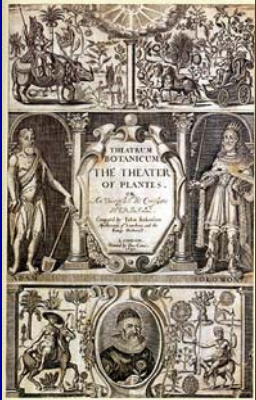
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Before you open it then strain it off and wring it very hard
 cold before you open it, then strain it off and wring it very hard
 and put it into a glass bottle. Then put as much loaf sugar as will
 dissolve it take four spoonfulls at a time as long as it lasteth
 give ye morning an hour after dinner and a little before you

go to Bed and after the syrup is done you may make more
 after the same manor and keep it by you and if you feel
 your heart oppressed at any time take 4 spoonfulls of it and it
 will Comfort you and make you healthy.

John Parkinson
Theatricum Botanicum, 1640

In this illustrated botanical, John Parkinson defined the world as an abundant garden. The linked allegorical images in the title-page woodcut suggest this sphere of knowledge, presided over by Adam, caretaker of the first garden, and Solomon, the monarch of wisdom. Personifications of the four known continents—Asia, Africa, Europe, and America—feature the flora and fauna that distinguish these individual realms. America, seen in the lower right corner, holds aloft a bow and arrow, Dressed only in a skirt of feathers, she rides a llamalike creature through a landscape dotted with cactus, hedgehog thistle, and passion flowers. Looming above these exotic species are two giant sunflowers.



Nicholas Culpeper (1616–1654)
astrologer botanist



Dr. Culpeper. Nicholus Culpeperus Engleus.
The physician of that time was very free,
Whom I have put as a rule to my mind,
Who hath made part of his art to be free,
In every time & manner in his book - engraving

A Physicall Directory
(translation)

1. He was contemptuous of the medical profession.
2. Refers to Physicians: A company of proud insulting, domineering Doctors, whose wits were born above 500 years before themselves.

Culpeper believed that every disease was caused by a planet and that in order to effect a cure a herb belonging to an opposing planet must be used.

He also held the view that cures could sometimes be made by “sympathy,” this is by the use of herbs under the dominion of the planet responsible for the disease, “every planet cures his own disease” he wrote “as the sun and moon by their herbs cure the eyes, Saturn and spleen, Jupiter the liver, Mars the gall, and diseases of cholera” (Blanche Henrey, 1975).

Culpeper was immensely popular up the 19th century and is still quoted by the credulous.

Conclusions

Herbal cures in the past vary from sensible, ineffective, ridiculous, to harmful.

While we smile at the outrageous claims of the herbalist, it is a fact that drugs derived from plants still remain the basis for much of modern medicine.

The modern trend is to discover the active ingredient and synthesize variations or permutations of the efficacious molecules.

Unfortunately pharmaceutical companies are not interested in botanicals as such because they cannot be protected by patent.

The recent interest in herbs as cures or inducers of “wellness” is now a prominent part of alternate medicine and has led to a revival of interest in the old herbals.

Conclusions

Some of the ancient herbs have been resurrected, and in many cases new benefits have been claimed.

These include *Echinacea*, approved in Germany for supportive therapy for colds and chronic infections of the respiratory tract and lower urinary tract, ginseng as a tonic and "adaptogen," and St. John's wort for mild depression.

The reader is advised to be cautious and pursue a common sense to herbal medicine.

An authoritative review of herbal medicine can be found in *The Honest Herbal: A Sensible Guide to Herbs and Related Remedies* by Varro E. Tyler (1981).
