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).

### Herbals of Antiquity

<table>
<thead>
<tr>
<th>Source</th>
<th>Herbal</th>
<th>Century</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sumerian</td>
<td>Nipur</td>
<td>21st BCE</td>
<td>Earliest medical text</td>
</tr>
<tr>
<td>Egyptian</td>
<td>Ebers Papyrus</td>
<td>15th BCE</td>
<td>Medical treatise, 811 prescriptions</td>
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<tr>
<td>Hellenic</td>
<td>Dioscorides of Caryntus</td>
<td>4th BCE</td>
<td>Lost ms</td>
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<tr>
<td></td>
<td>Theophrastus</td>
<td>4th BCE</td>
<td>Botanical treatise</td>
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<tr>
<td></td>
<td>Historia de Plantarum</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crateus</td>
<td>1st BCE</td>
<td>Lost illustrated ms, Physician to Mithridates</td>
</tr>
</tbody>
</table>

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 kashkuma 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

<table>
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<tr>
<th>Source</th>
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</table>
| Roman  | Dioscorides                     | 1<sup>st</sup> CE | 6<sup>th</sup> century copy extant  
De Materia Medica                  |         | Juliana Anicia codex                    |
|        | Pliny                           | 1<sup>st</sup> CE | Compilation                           |
|        | Herbal of Apuleis               | 4<sup>th</sup> CE | Derived from Pliny  
& Dioscorides                           |
| Chinese| Pen Tsao Ching                   | 1<sup>st</sup> CE | Refers to 27<sup>th</sup> century BCE |
|        | The Classic Herbal              |         |                                       |
| Indian | Charaka                         | 1<sup>st</sup> CE |                                       |
|        | Sourata                         | 2<sup>nd</sup> CE |                                       |
| Aztec  | De la Cruz-Badiano              | 1522 CE  |                                       |
|        | Herbal                          |         |                                       |

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

Dioscorides from title page of Gerarde’s Herball (1633), 2nd edition.
Scene traced by Singer (1928)
Dioscorides receiving mandrake from the nymph Euresis (Discovery) for Crateuas to paint. From Juliana Anicia Codex 512

Scene drawn by Martha Breen (Bredemeyer) in D’Andrea (1982)
Crateuas painting mandrake held by Epinoia (Thought and Intelligence)

Genealogy of Dioscoridian texts (after Singer)
Cowpea

Images from Dioscorides

Ferula

Lady’s bedstraw (Galium), Cranesbill (Erodium), and Geranium
Winter cherry (*Physalis*) and mulleins (*Verbascum*), *Codex Neopolitanus*, 7th century

> [the Romans call it Eruca, ye Aegyptians Ethrekicen, 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 digestiue, & good for ye belly.

They doe also use the seed of it in making of sawces, which that it may endure the longer, having 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.*

Rhizotomists gathering herbs

*Apuleius Platonicus 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

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<th>Source</th>
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<tbody>
<tr>
<td>German</td>
<td>Hildegarde of Bingen</td>
<td>1098–1179 CE</td>
<td>Woman mystic</td>
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<tr>
<td></td>
<td>Physica</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albertus Magnus</td>
<td>On Plants</td>
<td>1206–1280 CE</td>
<td>Saint, Dominican</td>
</tr>
</tbody>
</table>

Hildegarde of Bingen

- 1098–1179 CE
- Woman mystic
- First book in which woman discusses plants in relation to medical properties. Emphasis on medicine, includes recipes, diseases, cures, folk remedies.
- Earliest book on natural history in Germany; influenced German Fathers of Botany.
- Strongly concerned with science in contrast to other mystical and theological works.
- Lists plants not translatable into Latin and thus first mention of German name.

Albertus Magnus

- 1193–1280
- Scholastic philosopher.
- St Thomas Aquinas one of his pupils.
- Worked on morphology, distinguishes between thorns (stem structures) and prickles (surface organs).
- “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.”
- Felt that species were mutable, pointed out that cultivated plants might run wild and become degenerate while wild plants might be domesticated.
- Temperate tone on medical virtues.
History of Horticulture: Lecture 23

Herbalist garden & Store Room

European herb garden

Herbalists' Symbols
Heart plants include peaches, citrous and bulbous roots. Plants for scaly diseases include pine cones, thistles, cattkins, and lily bulbs. The snake and fish were added to show scaly skin.

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

Printed Herbals

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<td>Italian</td>
<td>Mattioli</td>
<td>1544</td>
<td>Commentary on</td>
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<td></td>
<td>Commentarii</td>
<td></td>
<td>Dioscorides</td>
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<tr>
<td>German</td>
<td>Hieronymus Brunschwig</td>
<td>1500</td>
<td>Distillation</td>
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<td>Das Buch zu Distillieren</td>
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<td>Otto Brunfels</td>
<td>Herbarium Vivae Eicones</td>
<td>1520, 1532, 1536</td>
<td>Known for Illustration</td>
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<td>Jerome Bock</td>
<td>Kreuter Buch</td>
<td>1542</td>
<td>Scientific</td>
</tr>
<tr>
<td>Leonhart Fuchs</td>
<td>De Historia Stipiei</td>
<td>1542</td>
<td>Scholarly</td>
</tr>
</tbody>
</table>

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
### Printed Herbals

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**Heironymus Brunswig’s frontispiece for Das Buch zu Distillieren 1500**

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**Otto Brunfels**  
1468–1534
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 Icones of Otto Brunfels*

*Herbarium Vivae Icones* 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 direction 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
Maize called “Turckish korn” from *De Historia Stirpium* 1542

Asparagus

*De Historia Stirpium*

Illustrators
Heinrich Fullmaurer
Albrecht Meyer

Engraver
Veit Rudolf Speckle

*From Vienna Codex, Codex Vindobonensis Palatinas*
### Printed Herbals

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<tr>
<td>Flemish</td>
<td>Rembert Dodoens</td>
<td>1554</td>
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<tr>
<td></td>
<td>Cruydeboech</td>
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<td></td>
<td>Charles de l’Eschuse</td>
<td>1557</td>
<td>French transl. of Cruydeboech</td>
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<td></td>
<td>(Clusius) Histoire de</td>
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<td></td>
<td>Plantes</td>
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</tr>
<tr>
<td></td>
<td>Matthias de l’ Obel</td>
<td>1570</td>
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<tr>
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<td>Stirpium Adversaria Nova</td>
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</tbody>
</table>

Note: Books of Dodoens, Clusius, and Obel are interrelated

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### 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.

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Frontispiece of *Cruydeboech*, 1554

Potato (*Solanum tuberosum*)

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

Charles de L’Excluse (Clusius) 1526–1609
Histoire des Plantes 1557

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

1. Studied plants of Southern France
3. Distinguishes plants by leaves.

Printed Herbals

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<tr>
<td>English</td>
<td>William Turner</td>
<td>1551, 1562,</td>
<td>A New Herball</td>
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<td>Henry Lyte</td>
<td>1578</td>
<td>Neivre Herbal</td>
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<td></td>
<td>John Gerard</td>
<td>1597, 1633</td>
<td>Herball 2nd ed.</td>
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<tr>
<td></td>
<td>Nicholas Culpeper</td>
<td>1652</td>
<td>The English Physitian</td>
</tr>
</tbody>
</table>

Trans. Dodoen’s Cruydeboech
Astrological botany

18
1. Figures of Fuchs.
2. Independent thinker, scorned superstition
3. Respectful of Ancients but not slavish

William Turner
_A New Herball_

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

2. No mere mechanical translation but work is annotated and corrected with references to l’Obel and Turner.

Henry Lyte (1578)
_Niewe Herball_

1. 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
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 handful of the leaves of Marygold, Greene

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

a stone jugg of a quart and put all these ingredients therein and stop

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 and let it stand till
dissolve it take four spoonfuls at a time as long as it lasteth
and put it into a glass bottle. Then put as much loaf sugar as will
cold before you open it, then strain it off and wring it very hard
give ye morning an hour after dinner and a little before you
go to Bed and after the syrup is gone 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 spoonfuls of it and it
will Comfort you and make you healthy.

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 llama-like creature through a landscape dotted with cacti, hedgehog thistle, and passion flowers. Looming above these exotic species are two giant sunflowers.
Nicholas Culpeper (1616–1654)
astrologer botanist

*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 choller” (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 interested 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.
History of Horticulture: Lecture 23

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.